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# SURVIVAL

GUIDE

Vol. 5 Issue 10

## 6X6 BUG-OUT BEAST

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## FADING TO BLACKOUT

Staying Up When the Grid Goes Down

## GUNNING FOR SURVIVAL

You're Defenseless Without Skills

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STAYING ALIVE IN A BLACKOUT SITUATION

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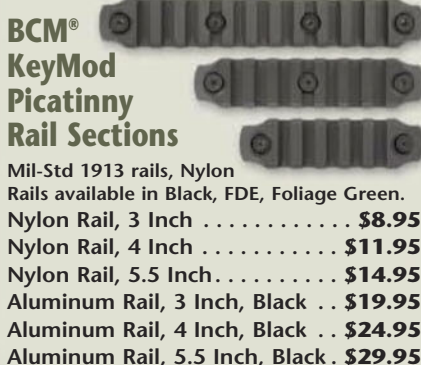
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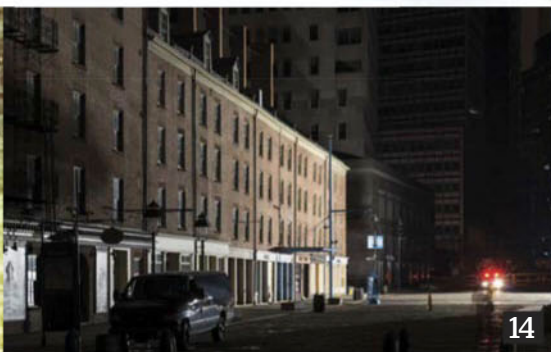
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AMERICAN SURVIVAL GUIDE (ISSN 2331-8937) is published 12 times a year—January, February, March, April, May, June, July, August, September, October, November, December—by Engaged Media, Inc., 22840 Savi Ranch Pkwy., Suite 200, Yorba Linda, CA 92887. POSTMASTER: Send address changes to *American Survival Guide* c/o VSI, Inc. 905 Kent St., Liberty, MO 64068. © 2016 by Engaged Media, Inc. All rights reserved. Reproduction of any material from this issue in whole or in part is strictly prohibited. GST #R55050365RT001 Canada Post: Publications Mail Agreement #40612608. Return undeliverable Canadian addresses to: PITNEY BOWES, INC. P.O. Box 25542 London, ON N6C 6B2, Canada..





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# WORDS

## SURVIVING IN A GRID-DOWN WORLD

VOL. 5 ISSUE 10

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(714) 939-9991 • Fax: (800) 249-7761  
www.americansurvivalguidemag.com  
www.facebook.com/americansurvivalguidemagazine  
www.facebook.com/eambybeckett

AMERICAN SURVIVAL GUIDE (ISSN 2331-8937) is published in January, February, March, April, May/June, July, August, September, October, November and December by Engaged Media Inc., LLC, 22840 Savi Ranch Parkway, #200, Yorba Linda, CA 92887. **POSTMASTER: SEND ADDRESS CHANGES TO AMERICAN SURVIVAL GUIDE, C/O ENGAGED MEDIA INC., VSI, INC., 905 KENT ST., LIBERTY, MO 64068.**  
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### SUBSCRIPTION RATES

\$32.95/1 year, \$52.95/2 years. Outside the U.S., add \$32.00 per year payable in U.S. funds. Single copy price is \$8.99. Please allow 6 to 8 weeks for new subscriptions to begin.

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In a grid-down world, you will be called upon to be your primitive self. A grid-down world might last weeks, months or more. Who knows?

"Grid down" is a rational fear. For instance, China is perfecting its device to use an EMP on Taiwan; and, if we interfere, it's likely to be used on us—or at least on the ships we might have in the area.

The "grid" is very fragile. We have three that are linked: Eastern, Western and Texas. We really have no control of these. We are sitting ducks, just quacking along, willy-nilly, in our own little bubble of electricity, power, lights, gas and all that goes with these services. Terrorists could inject a virus in a heartbeat into this computer-driven nightmare that is waiting to happen.

Electromagnetic pulses (EMPs) are legitimate fears and could easily down the grid. Millions heat their homes with electricity. Many oil heaters use an electric switch to turn them on.

And, if an EMP hit, our love affair with computers would be over in a split second. Most systems in your home would not work. If you have solar electricity, you might be able to keep a few things going, such as your refrigerator, for a few hours a day. In some cases, those who have generators will be able to continue running some things ... but generators use a lot of fuel. (How much fuel does the average person have stored? Enough to last a week, a month? And then, what?)

Most folks do not have a large supply of batteries. How long before those are gone?

In a grid-down world, we will not be able to buy gas, because gas pumps are all electric. In addition, EMPs can affect most trucks and cars that have computers. (By 1981, car manufacturers

were installing computers in many of their cars and trucks.)

Kerosene stores for a very long time; with frugal use, you would be able to cook on camp stoves and use old-time lanterns for light. For heat, there are excellent kerosene heaters that are also fairly inexpensive. And, in the high desert, where I live, wind generators are common. They could be a viable option for some.

Transportation would be a major issue. Just going to buy food would be a hardship. If you have a bike, it might work well for personal transportation. If you have a horse, that could work also.

To preserve some food items, you might do well to go low-tech: Consider setting up several zeer pots. A "zeer pot" is essentially a clay pot inside a clay pot that uses wet sand in between. This device keeps a lot of foods from spoiling. In addition, if you have a root cellar, you will be way ahead of most folks.

We take for granted certain services that are almost invisible, such as garbage pickup. Because that service will be gone, you will see how amazingly fast a place will fill up with garbage. Your option might be burning the garbage and maybe composting some. You could consider digging a large pit for garbage, but in some areas, that simply won't work well.

In a grid-down world, being prepared and truly owning survival skills is going to be essential to your survival. You must think outside of the box, because, well, there won't be a box.

I really hope none of the potential looming tragedies ever happen. Our wonderful way of life could be erased in a minute. Nevertheless, it is wise to be fully prepared ... just in case.

— **Dude McLean**



# DARKNESS

## IS COMING



Fire, flood, hurricane, tornado, earthquake, terrorism, nuclear/biological/chemical, destruction, panic. These disasters present lethal challenges in daylight. They are compounded by darkness. Are you ready? TNVC is the only place to obtain all the necessary low light and no light gear to not only survive, but endure and prevail when disaster strikes. Don't be caught in the dark!

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# PRODUCTS

## NEW

1

### Green Beret Pocket Guide

Terrorism is a constant threat throughout the world, including right here, in the United States. One way to combat this threat is to remain ever vigilant of our surroundings so we can remove ourselves from danger and notify authorities whenever it is needed. Small in size—but huge in valuable information—Brian M. Morris' *Green Beret Pocket Guide* is crammed with great information to assist you in being situationally aware. In this guide, you will get to understand the ways of the renowned U.S. Army Special Forces and how to apply its methods in daily life. In situations ranging from skyjacking to choosing a home, this is a must-have guide to help you be proactive, rather than reactive, in your preparedness for your safety.

**MSRP**  
\$12.95

**URL**  
[www.BrianMorrisPersonalProtectionSolutions.com](http://www.BrianMorrisPersonalProtectionSolutions.com)

2

### Hazard 4 Overwatch Pack

Hazard 4 has the pack for you if you want to carry your rifle in a backpack. This is an excellent choice for a true bug-out, armed defense go bag.

This pack is incredibly modular, with a removable waist belt and MOLLEs galore. The inside of the pack has inner compression straps so your rifle does not move during transport. There are several organizer pockets within to keep admin, optics, hydration comms or other needs separate and ready to use. The pack features plenty of thermoformed padding to make it comfortable to wear and safe for your gear, and there are adjustable straps and sleeves to accommodate most rifles and body sizes.

**MSRP**  
\$289.99

**URL**  
[www.Hazard4.com](http://www.Hazard4.com)

3

### Gerber Gator Golok Machete

"Affordable, high-quality machete" comes to mind as soon as you pick this bad boy up. Whether you are clearing green brush or woody stems, this cutter will make short work of whatever you need to get it out of your way. The blade is a full tang and much thicker than most in the same class, but it is still incredibly light to make it easy to use for longer time. It is 19 inches long overall but comes in at only 25.3 ounces. This machete has an easily adjustable paracord lanyard for whatever grip you want to utilize. Add in a textured Gator Grip handle and sturdy sheath with D-loops, and you have yourself a trail-blazing machine.

**MSRP**  
\$65

**URL**  
[www.GerberGear.com](http://www.GerberGear.com)

4

### The Charger Emergency Hand-Crank Flashlight

Severe blackouts or dusty, rubble-filled streets create a need for artificial light to find your way around. But after a disaster, batteries can be impossible to find. Instead, use human power to keep your flashlight shining strong. One minute of hand cranking charges the internal NiMH battery to generate up to 30 minutes of continuous light. This emergency flashlight is small and compact, which makes it easy to carry—no matter what style of clothing you wear. The unit features two light modes, while its internal batteries and three LEDs never need replacing. This item is a simple, yet essential, component of everyone's urban survival plan.

**MSRP**  
\$7.95

**URL**  
[www.BePrepared.com](http://www.BePrepared.com)

5

### Blackhawk! Diversion Wax Canvas Rucksack

Keeping important gear close by and in a covert container is a must-have setup for those who are prepared. Blackhawk! provides that solution with a hardy bag that looks like a simple gym or traditional backpack.

This rucksack allows the user to go out prepared (and in style) without drawing attention. Its wax canvas, 10-ounce duck fabric construction is incredibly durable and comfortable to carry. It has a waterproof lid that opens to a sizable main compartment.

An ample admin pocket is there for keys, phone and more. A hidden and padded compartment allows you to stow your handgun and laptop away from those you do not want to see it. Internal mesh pockets make this an excellent choice for the well-prepared urban or rural consumer.

**MSRP**  
\$249.99

**URL**  
[www.Blackhawk.com](http://www.Blackhawk.com)

6

### Seek Thermal Reveal XR Thermal Imager

You can own the night for your security and hunting needs. Seek Thermal offers a handheld thermal sensor device in a small, comfortable and affordable package. Providing a 206X156 thermal sensor and a 300-lumen LED flashlight, this device will meet whatever needs you might have in low-light conditions. You can then utilize the color display to determine what is out there in a way the human eye simply cannot do. This particular device is designed to be a scanner, which means you get quick imaging speeds to reduce blur while you use it on the move. You can also store and share images on a MicroSD card via a USB cable connection.

**MSRP**  
\$449

**URL**  
[www.Thermal.com](http://www.Thermal.com)



5

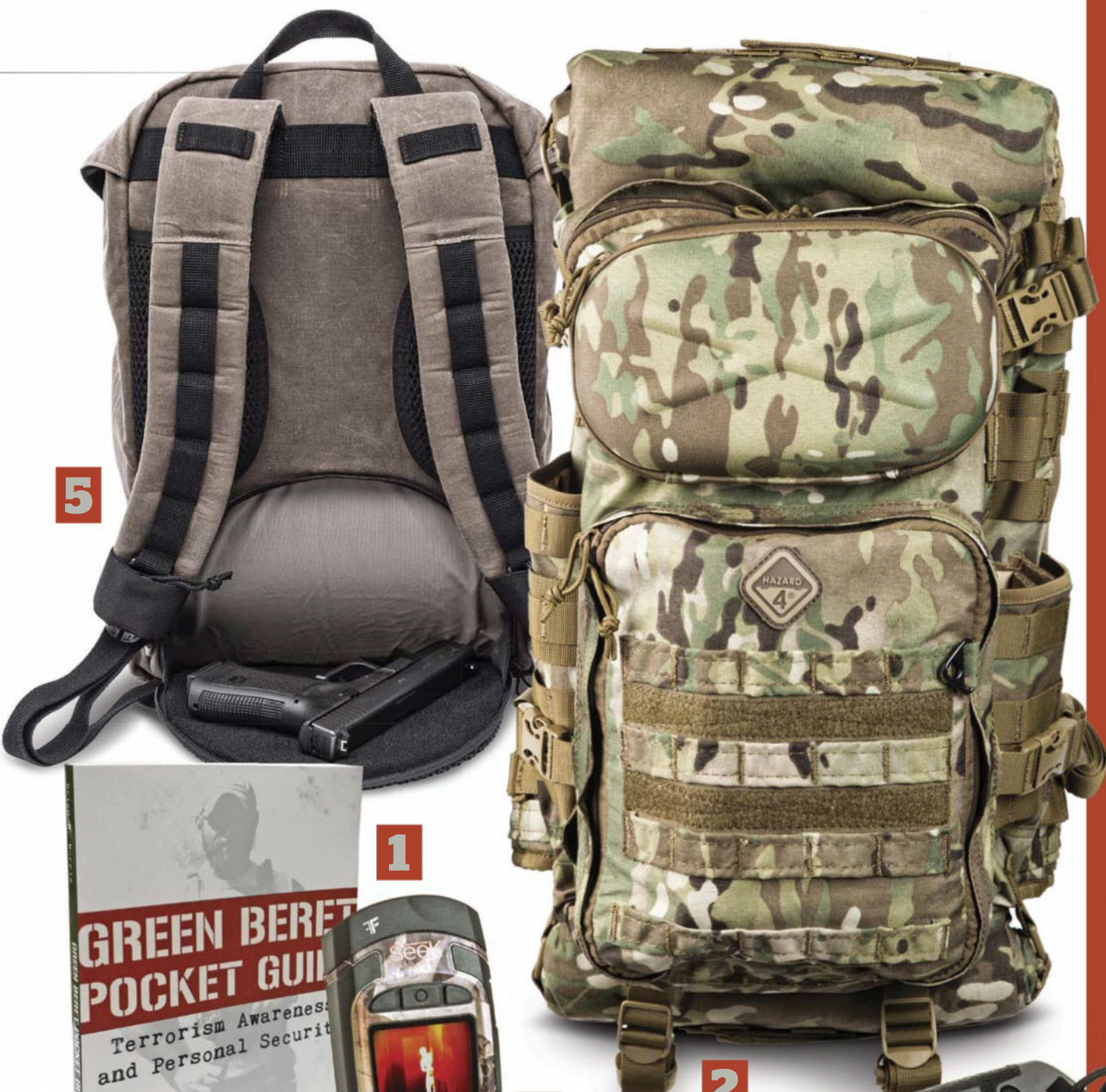
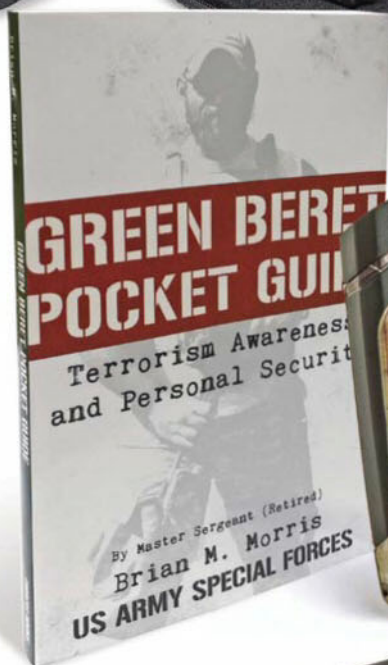
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# PRODUCTS

## NEW

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### Walker's Razor X

The Razor X incorporates a device worn around the neck that features retractable digital ear buds. These buds provide incredible comfort for all-day shooting.

The Razor X's behind-the-neck design prevents interference with you or your weapon, allowing you to focus on your target. The remarkable, patent-pending buds provide an impressive 31dB of noise reduction, so the user can be in loud environments without damaging their hearing. The Hi Gain omni-directional microphones provide clear sound enhancement for enjoyable conversations on the range or to hear firearm instructors' directions while training. Two different ear bud styles are included for compatibility with most users' ears.

**MSRP**

\$119.99

**URL**

[www.GSMOutdoors.com/Walkers](http://www.GSMOutdoors.com/Walkers)

8

### SJK Slumberjack Contour Bivy

Whether you are out big-game hunting, backpacking, or survival or tactical training, the lighter your pack is, the more effective you can be. Utilizing a bivy is a great way to go minimum on your shelter but still have a dependable, waterproof, bug-proof option. Choosing the new Kryptek highlander camouflage pattern as an option will also allow you to remain unseen. This bivy has side arm ports so you can stay inside and still access gear outside (such as a weapon or map or to stoke the fire). The hooded design and no-see-'um netting allow this bivy to ventilate well, making it one of the best backcountry options available.

**MSRP**

\$99

**URL**

[www.Slumberjack.com](http://www.Slumberjack.com)

9

### SaberBack Bowie Knife

This Bowie is ready to take on the concrete jungle with durability, razor-sharpness and the ability to hack its way through most materials with ease. Sporting a 10-inch blade and rugged saw teeth, this knife will make short work of nearly any material it faces. Constructed of 65Mn carbon spring steel with a rubberized, ergonomic handle, the SaberBack can be your best friend when facing urban obstacles or when your personal safety is at risk. As intimidating as it is practical, this Bowie will make those out to do you harm think twice.

**MSRP**

\$64.95

**URL**

[www.OutdoorEdge.com](http://www.OutdoorEdge.com)

11

### Condor Outdoor Double Rifle Case

Whether you are traveling to a training event or simply want to keep your rifles together for team tactics, Condor has made it easy to keep your gear in one location.

This 36-inch double rifle case comes in a number of color options, including useful camouflage patterns. Four internal straps on each side of a padded center divider make this a great option for keeping your rifles secure. A 26-inch-long internal pocket is great for handling side arms, optics or other items. There are two modular pouches designed to carry magazines and another utility pouch for items such as eye and ear protection.

There is plenty of padding throughout, including on the storable and detachable shoulder straps. A nearly bombproof YKK zipper keeps it all together, even when it is carried fully loaded.

**MSRP**

\$77–145.95 (based on color)

**URL**

[www.CondorOutdoor.com](http://www.CondorOutdoor.com)

10

### Crimson Trace Rail Master

Self-defense in low-light conditions is of high priority in our current world. Maintain positive weapon retention by keeping both hands on your weapon. You can then get a better visual and sighting option with this sighting system. With a slight tap, you can easily activate the sight, light or both to meet your needs. It is made to ergonomically fit pistols, rifles and shotguns to make you ready, whatever weapon you choose to use, and can take considerable abuse and still maintain zero. It comes with easy-to-read instructions so you can mount it at home—no gunsmith needed.

**MSRP**

\$139

**URL**

[www.CrimsonTrace.com](http://www.CrimsonTrace.com)





12

## Safariland Holsters for New S&W Shield

Smith & Wesson recently released a new model of its incredibly popular M&P Shield. Safariland, one of the top providers for law enforcement and tactically minded individuals for decades, is on top of the game and already has more than 15 concealment holster models designed to fit the new weapon. Whether you carry belt-side, paddle or inside the waistband, you will certainly find a Safariland holster to suit your needs. The company also offers other models that allow you to easily and comfortably carry weapons with optic, laser or light options.

### MSRP

\$48–78 (depends on model)

### URL

[www.Safariland.com](http://www.Safariland.com)



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# FADING TO BLACKOUT

## TIPS TO HELP YOU OUTSHINE THE MASSES THE NEXT TIME THE POWER GRID FAILS

BY RYAN PRICE

**T**he first few seconds of complete silence just after the power goes off are the most disturbing. The humming of the fridge, the whirling of the air conditioner condenser and all those little ticks, buzzes and clicks of the clocks, ceiling fans and lights show you how much the modern world depends on electricity.

In a flash, your home is as quiet as a mausoleum, and with the sun dipping below the horizon, you'll soon be in the pitch-dark gloom of night—an inky void you might never have experienced before. The first questions that spring to mind are these: *Will it come back on? What will I do if it doesn't? What do I do? Am I prepared?*

### DAMAGE ASSESSMENT

Check to make sure your main circuit isn't tripped, and verify with your neighbors that their power is out, too. Dark streetlights are a good indication that it is at least your whole neighborhood. You can guess why it is out—maintenance on the system; a traffic accident took out a transformer. So, the odds are good that it will only be out for a few hours to a couple of days.

With the power out, businesses that have backup power sources, such as government operations, hospitals and other utilities, will continue to function on a limited basis. The rest—the banks, gas stations, grocery stores

and many other places—might simply close their doors if they're unable to transact business without computers.

If a power outage goes on for too long (or those generators run out of fuel), it won't take much time for either a mass exodus from the affected area to occur or for widespread looting and an increase in "survivor crime." The panic will probably double or triple if the outage happens during particularly hot weather (which it usually does).

### PREP FOR OUTAGES

You'll need light, and you'll need power. There are several companies—Goal Zero, for example—that offer power packs charged via the sun, which can provide a great source of electricity for a variety of devices all the way up to standard 110V service.

Keeping a small, well-maintained generator will provide electricity for most lights, the television (you might still be able to receive some OTA programming). Also consider keeping handy a 1,000-watt inverter to connect to your car battery to run/charge small appliances. Have on hand an old-fashioned gas/mantle lantern, but make sure you have plenty of propane and extra mantles.

Modern-day oil lamps are a great way to light a space, and the oil will last a lot longer than batteries. Make sure to have enough lamp oil in reserve. And, if you don't



mind a good arm workout, a hand-crank-powered LED lantern is invaluable.

How about all that food in your refrigerator? Fill a dozen or so plastic bottles with water and keep them in your freezer. When the power goes out, they will act as ice packs in your fridge to keep your food colder longer (and you can drink the water after they melt). If you have a generator, you should have very few short-term worries. Power up the fridge with the generator, but only let it run long enough to keep the temperature below 40 degrees. Turn it off to save power so the fuel will last longer.

Before you need it, invest in a cache of freeze-dried foods that can be stored for a long time and take very few resources to prepare. A good supply of canned goods—fruits, condensed milk, beans, meats—will last a very long time, and with a month or two of supplies, you might weather the situation just fine.

Have a barbecue or camp stove at your service, along with plenty of propane. Better yet, a wood-burning stove or fireplace will help cook most any food. If you're remotely handy and it comes down to it, a solar oven can be made with some tin foil.

The idea is to have 1 gallon of water for each person each day the power is out. In order to stay put as long as possible, you should have a large cache of water available for just such an emergency.

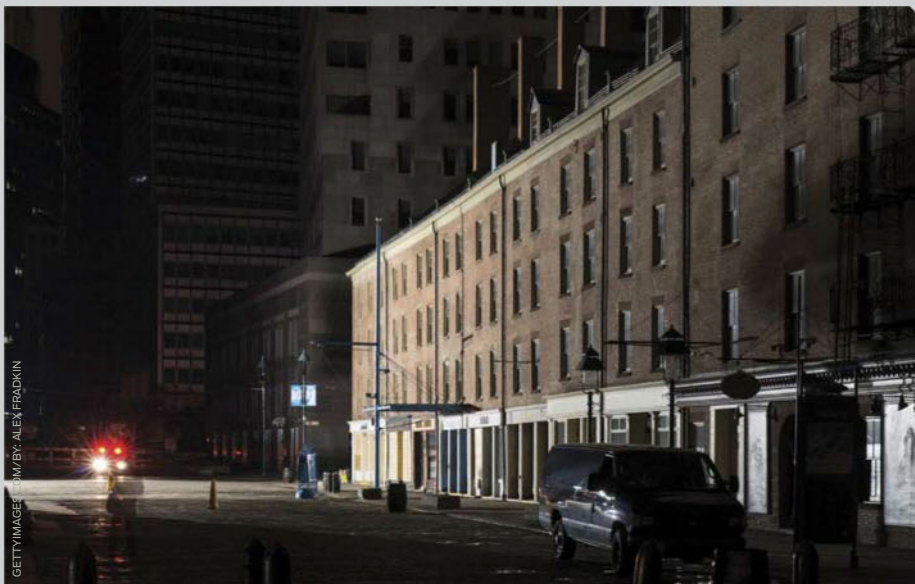


# THE NATION'S FRAGILE POWER GRID

Despite the power of electricity and all that it can do in our modern civilization, the power grid in most major cities is quite a fragile thing.

From the thinly strung-out infrastructure of the electrical system to the vulnerable "smart grid" that is being implemented across the country, it wouldn't take a great deal of effort to bring the whole thing crashing down. A malicious cyber attack, the rise in fuel costs or a simple overloading of the system can bring down the entire grid in seconds, blacking out not just your street, neighborhood or town, but entire states and/or regions of the country.

A massive power outage could take weeks or months to restore. Meanwhile, our reliance on electricity will have stopped us dead in our tracks.



GETTY IMAGES (M) BY: ALEX FRADKIN

***"IF A POWER OUTAGE GOES ON FOR TOO LONG ... IT WON'T TAKE MUCH TIME FOR EITHER A MASS EXODUS FROM THE AFFECTED AREA TO OCCUR OR FOR WIDESPREAD LOOTING AND AN INCREASE IN 'SURVIVOR CRIME.'"***

Even if you think you don't have space, there are many options for water storage, from small to large. For example, Water Bricks ([www.WaterBricks.org](http://www.WaterBricks.org)) offers stackable, 3.5-gallon containers for storing water. No room? Stack them into the shape of a table and cover them with a cloth.

Start collecting cases of water and stash them wherever you can find space (under the bathroom sink, under your bed, etc.). Invest in a WaterBOB ([www.WaterBOB.com](http://www.WaterBOB.com))—a food-safe plastic bag that can hold up to 100 gallons of water in your bathtub. Construct or have on hand a rainwater collection system, and don't forget to keep handy a variety of water filters to clean whatever water you collect.

## DAY-TO-DAY GRIND

The first few days will be the most difficult, not from a survival standpoint, but psychologically. Without any notification from the utility company or local government about





the situation—maybe they've got bigger issues to deal with—you're going to be cut off from information about whether the power will come back on or not. The unknown is always the scariest. A battery-operated radio might not have the information you need, but at least, it provides contact with the outside world. Reserve, preserve and protect your resources.

Stumbling around in the dark isn't going to help your cause, so you'll have to provide your own sources of electricity. Break out your solar-powered lantern and your dynamo-powered radio. Flashlights take batteries, which will eventually drain, so save those for special circumstances. Keep extra batteries, or have alternative methods of charging. Don't discount lighting up your living room with a fire in the fireplace. It'll keep you warm, and you can use it to cook a meal or boil some water.

If you've done your prep work, you should be safe and secure in your house for at least two months, meaning that you have two months of food and water and enough survival gear to sustain you. If you don't, now is the time to start putting together a selection of gear and skills to fill the void.

## FRIDGE MANAGEMENT

Closely monitor the temperature of your refrigerator. When it approaches that dangerous 40-degree threshold, transfer the expendable foods from the freezer to the refrigerator. Things such as bags of peas and corn, ice packs, ice trays, frozen pie crusts, Grandma's fruitcake from last Christmas—anything you might not eat unless you're desperate—can be placed in the fridge. The frozen foods will begin to thaw, but they will help keep the fridge's essentials (milk, meat, eggs) colder longer.

If it is snowing outside or the temperature is below freezing, use the snow or make ice to keep the fridge cold, treating it like an old-fashioned icebox.

Help your refrigerator work as efficiently as possible by pulling it about 2 feet away from the wall. This will allow more air to flow around the black heat-dissipation coils.

➤ When the grid is down, preservation and consumption of perishable food should be a priority. The old adage, "One bad apple spoils the bunch," is true, and sloppy food storage has been the downfall of many food supplies throughout history.



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# RECALLING THE 1977 NYC BLACKOUT



Can the 1977 New York City blackout happen again? Consolidated Edison (ConEd), the utility New Yorkers love to hate, was singled out by New York City Mayor Abraham Beame as the sole reason for the blackouts. He cited "gross negligence" on its part for the blackout that caused so much looting, arson and violence in the city over the span of 12 sweltering hours in July 1977.

Con Ed's chairman, Charles Luce, cited "acts of God" and the unpredictable and highly improbable quadruple strikes of lightning hitting the exact wrong spots each time.

Either way, New York went dark, and all hell broke loose.

On the evening of the blackout, a severe thunderstorm swept across Westchester County (north of the city) just as 9 million electrical users were switching on their air conditioners to do battle with the hot, humid night. Estimates placed the demand on the system at around 3,800 megawatts of power. To cope with this, ConEd was drawing power from various networks, including New England and Pennsylvania.

Around 8:30, lightning in Westchester knocked out about 900 megawatts from the system.

Controllers with ConEd scrambled to make up the power loss. If that had been it, the system would have maintained itself, and a crisis would have been averted. However, 20 minutes later, two more lightning strikes took out two 345-kilowatt lines that brought power from upstate New York and New England. Another lightning strike three minutes later reduced ConEd's supply by 2,000 megawatts. For ConEd, that was the beginning of the end.

After the 1965 blackout, procedures had been put in place to protect power plants and transmission lines from failure. Now, systematically, outside providers in Pennsylvania, Long Island and New Jersey began to sever themselves from the failing grid. Despite ConEd operators trying to "shed power" (that is, reduce the demand by cutting off power to certain areas), by 9:30, the last power station, "Big Alis," in Queens shut down. With it, all of New York went dark.

## COULD SOMETHING LIKE THIS HAPPEN AGAIN?

When dealing with a system with a large number of components and variables, and adding to it the uncertainty of weather, the numbers say,

"Yes," and history proves this.

In 2012, two major storms, one on June 29th and Hurricane Sandy in October, darkened 3.8 million homes and businesses from Indiana to North Carolina and more than 8 million along the Eastern seaboard, respectively.

Weather is not the only culprit. Speaking to Fox Business in 2013, University of Minnesota professor of computer and electrical engineering Massoud Amin pointed out that U.S. power control stations see as many as 100,000 probes by hackers each day. What this means is that outside sources are mapping out the U.S. system, searching for any and all flaws to exploit and possibly darken more states than any natural disaster could accomplish.

However, many cyber experts believe that such an attack would require resources beyond what most hackers could muster and that only major powers such as Russia or China could conceivably launch this type of attack on the electrical grid. (And they ask, *Why would they do such a thing?*)

Nevertheless, despite building a smarter, stronger grid, the United States and Canada are, and will be, prone to large blackouts each year.

Better still: Position the fridge so those coils face an open window, through which cooler air or a breeze will help keep them from getting too hot.

Don't open your refrigerator until it is absolutely necessary. Make a mental list or write down everything you think you have in there and plan your future meals accordingly. Once the fridge's temperature rises above 40 degrees (F), any meat, poultry or



◀ *Far left:* Looters will hit stores shortly after extended power outages occur. Have your food and water in place before then, because the stores will be empty and not worth the risk of exposure on the street.

◀ *Near left:* Have your backup power plan and gear ready to go, because the authorities will prioritize emergency and other critical services over residential areas.



**“WATER IS KEY TO EVERY ASPECT OF YOUR SURVIVAL. WITHOUT IT, YOUR LIFE IS ON THE CLOCK.”**

will assume (correctly) that because you have light and power, you have spent time and effort preparing for disasters and will have a host of food and supplies to withstand whatever might come.

Protect yourself by not advertising your ability to persevere. Use heavy blankets to black out your windows and a length of tape to keep the light from spilling out under your front door; and don't forget to block the peephole.

If you have to go outside with your light, use a small flashlight, and keep the beam directed exactly where you need it. Skills used in protecting your perimeter will be helpful here. If your house or apartment looks like just another victim of the blackout, thieves bent on taking advantage of your stash might just overlook it.

### WEATHER WARNINGS

We place a high level of responsibility for our comfort on electricity and climate control. Without power, the outside temperature will have a large effect on your comfort level.

If it is hot outside, go to the lowest level in your home, such as a basement, to stay cool (cool air falls, and basements are usually underground, too). If you don't have a basement, find an interior room, away from outside walls. Wear light, airy clothing, and drink plenty of water.

If it is cold outside, layer your clothing. Don't use your gas oven as a source of heat. Close all blinds, and gather in a small room, preferably on the southwest area of the house, where the sun will hit it the most.

### THE UPSHOT

Realize that having electricity isn't as important as society makes it out to be and that you are a survivor with the knowledge and proper gear to withstand nearly anything. In a true survival situation, focus on your immediate safety from threats, the security of your shelter, and food and water first. Your Candy Crush games can wait until the power comes back on. **ASG**



➤ Above, left: Gas lanterns provide adequate light for extended periods, but be mindful of the potential fire and air quality risks.

➤ Above, middle: Mini stoves provide maximum benefits when you have no other cooking options. Safe operation and menu selection should be worked out prior to use in emergencies.

➤ Above, right: Generators provide a mixed benefit, because they require ample fuel and create an audible beacon that will draw attention to your location.

seafood will last only a couple of hours. This also holds true for soft cheeses, eggs, fresh-cut fruits, creamy dressings and any dairy products, such as milk and sour cream.

This same guideline goes for the freezer, as well. Once you reach that threshold, you'd better eat what's in there or throw it away. North of 40 degrees is bacteria country. Being in an emergency situation is one thing, but being in it while sick is something different.

### WATER WAYS AND MEANS

Water is key to every aspect of your survival. Without it, your life is on the clock. Soon after a widespread power outage, the water supply will be affected. Pumps, valves, timers and substations in your city that provide enough water pressure to keep your faucets running will eventually stop working. This means you need to gather as much water as you can.

It's water-hoarding time! Plug the drains of all your bathtubs and sinks, and fill them until the water stops running. Collect as much water as possible in the shortest time possible. A person needs about a gallon a day, so plan accordingly.

If you have gutters on your house, put collection buckets under them in case it rains. String a tarp across your balcony or lay it out on your lawn so rain runoff can collect in a bucket. Realize that there are dozens of gallons of water around your house or apartment—from the 50 to 70 gallons in the water heater to one or two in each toilet's reservoir tank.

### BLACKOUT DEFENSE

During a power grid failure, those who are unprepared and see in the pitch darkness a white beacon emanating from your house will be drawn to it like moths to a flame. They







# ***HUNKER DOWN OR BUG OUT?***

## **LET THIS BE YOUR GUIDE TO PREPPING FOR A PENDING DISASTER OR ALL-OUT GRID-DOWN CHAOS.**

BY DR. MARTIN D. TOPPER

**I**t's easy to think you'll simply bug out when disaster is imminent: Just hop in the car, turn the key and rely on the trusty bug-out bag in the trunk to keep you alive until you again reach "civilization." But how many days and miles will it take to reach a safe place? One? Three? Fifteen?

That all depends on conditions that no one can predict. Therefore, staying home and sheltering in place might be the best choice—unless civil disturbance, flood, wind damage, etc., make it impossible to stay put.

### **HOW IS YOUR INTEL?**

When I worked in Washington, D.C., a good friend asked me what I thought of his bug-out plan if there were another terrorist attack. He said he and his father were considering buying land in the mountains of North Carolina to set up an emergency retreat.

Instead of giving an opinion, I asked him two important questions. How would his family get there? And how would he ensure that his

remote retreat would not have been taken over by other evacuees who got there first? North Carolina is a 10-hour drive from Washington on the interstate, but during a mass evacuation, it might take that long to just reunite with family in D.C. The trip to North Carolina would likely take several days over congested roads—if he could find sufficient gasoline to get where he was going.

The problem is having enough accurate information so you can leave before the roads and public transportation are either jammed or out of commission. In addition, most of us have jobs, which we can't just walk away from every time we suspect a terrorist attack, a hurricane or a riot in a nearby part of the city. So, we'd need good intelligence to know the threat was real. And good intel can be hard to come by.

Hurricanes Katrina and Rita are both good examples of how publicly available information can lead to the wrong conclusion. When Katrina first hit, the news media focused on New Orleans and the small amount of damage done by the wind and rain. Then, the

levee broke, and within 72 hours, not only had the city descended into chaos, it also became clear that the storm had crippled the entire region and that a nationwide relief effort was needed.

Rita was different. The governor and state emergency planners called for what they thought was an early evacuation when it looked like the storm was going to hit Houston. The storm changed course, and the evacuation became a massive traffic jam that clogged highways. Many people ran out of gas, and around 100 evacuees died of heat stroke or accidents.

## PLANNING AHEAD

What's the solution? For my family and myself, it's being prepared to shelter in place unless it becomes clear that staying home would represent more risk than bugging out in the family car or the authorities issue an order to leave.

If evacuation becomes necessary, I've planned several things ahead of time. First, I know what to take. The cupboards might be full, but most everything I own will have to be left behind, and chances are that I won't be able to return and recover any of it.

The accompanying sidebar on page 25 contains a list of bug-out supplies that will fit in most family cars. These items should be prepared in advance and either pre-packaged (1- and 2-gallon ziptop bags

**“... MY PERSONAL PLANNING HORIZON FOR SHELTERING IN PLACE IS ABOUT TWO WEEKS.”**



➤ *Top:* Although Hurricane Rita did not hit Houston directly, it severely damaged communities on the Texas-Louisiana border. A battery-operated radio is essential during an evacuation, because it tells you where *not* to go! (Photo: FEMA)

➤ *Top right:* In spite of the fact that it was done in stages, the evacuation of Houston during Rita turned into an enormous traffic jam. (Photo: Show Me How)



➤ *Bottom right:* Charlene Stennis takes her son Christian Hoo-Fong from a fireman after being stranded in a vehicle by flood water on October 4, 2015, in Columbia, South Carolina.



# HURRICANE RITA

Hurricane Rita made landfall as a category 3 storm on September 24, 2005. On September 21, a staged evacuation was ordered at 6:00 p.m. However, nearly 3 million people tried to leave, and the contra-flow lanes took more time than anticipated to open for evacuation. The end result was a monumental traffic jam as people ran out of gas. Lessons learned? Contracts were let to ensure that gas stations would get extra supplies of fuel, and the evacuation plan was revised.



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## “HURRICANES KATRINA AND RITA ARE BOTH GOOD EXAMPLES OF HOW PUBLICLY AVAILABLE INFORMATION CAN LEAD TO THE WRONG CONCLUSION.”

work great) or pre-positioned for easy access.

Getting things pre-packaged and pre-positioned is only one aspect of evacuating to a remote location. First, and most importantly, evacuees must have a clear destination in mind. Unless you own a piece of easily accessible, remotely located property or have relatives in the country who will be willing to take you in, you'll need to identify specific localities where you might be able find shelter. It's best to select several locations, because some might have been impacted heavily by the event you're looking to escape.

Second, once you know where you're going, how are you going to get there? I would try to avoid the interstates, although secondary roads might also be crowded or even blocked by trees or debris, as were a number of roads in Virginia after Hurricane Isabel.

### SHELTER IN PLACE

When you think about all the things that can go wrong during an evacuation, sheltering in place at home seems to be a no-brainer. That's not always the case for city dwellers. During the Florida hurricanes in 2004 and 2005, there were news stories about elderly people living in condominiums who found themselves stranded on the upper floors with no power, no air conditioning, no way to open the windows and many flights of stairs between themselves and relief supplies.

Fortunately, there's a way city dwellers can mitigate many of the problems that come with sheltering at home in an urban area: Develop good relationships with your neighbors. A lot of things that one or two people can't do alone can be done in cooperation with others.

I had the privilege of living with a Navajo medicine man for the better part of two years in the early 1970s. From the moment I moved in, it was clear that many elements of the day-to-day operation of the Navajo system of subsistence horticulture and pastoralism required the cooperation of a number of the medicine man's kinsmen. When living at the subsistence level, or when sheltering at home during a disaster, redundancy is the key to survival, and that's why you need to develop cooperative relationships with your neighbors.

◀ *Top:* Hurricane Rita's surge covers the bay in Lake Charles, one of the worst affected areas. Most of the low lying area are flooded with the water still rising due to heavy rains.

◀ *Bottom, left:* An emergency responder helps evacuate two people with a boat after their neighborhood experienced flooding during Hurricane Sandy. The storm claimed at least 16 lives in the United States and caused massive flooding along much of the Atlantic seaboard.

◀ *Bottom, right:* In Beaumont, Texas, St. Elizabeth Hospital nurses and other medical personnel evacuate the building on September 24, 2005, after spending the night in the hospital as Hurricane Rita ravaged the area.

What will you need to survive at home? That's a good question, because what you'll need depends on how big a disaster you're expecting. Has the power grid gone down? How long might the outage last? Other than living in a sheep camp on the reservation, the longest I've been without power in a city is eight days after Hurricane Isabel. (Fortunately, I had kept most of my fieldwork gear, and I quickly pressed it into service. It wasn't exactly comfortable, but my family managed until power was restored.)

Given this, as well as what I've learned from various sources about disasters in other parts of America, my personal planning horizon for sheltering in place is about two weeks. Other friends of mine store enough food and supplies for a year. Many of them live out West or in more-remote locations of the East. If I still lived back in northern Arizona, away from major population centers, I'd probably extend that preparation period to at least two months.

How much you stockpile for sheltering in place will really depend on the amount of time you reasonably expect it will take for assistance from private relief organizations, your state or the federal government to reach you.

### HOME MUST-HAVES

Let's look at the types of supplies you should have. One of the first things most people think of is a firearm, and I have to admit that the experience of Los Angeles's Koreatown residents during the Rodney King riots and the experience of people living in Homestead, Florida, after Hurricane Andrew both bear witness to the fact that firearms can be important in a disaster. An AR, AK or M-1 carbine would be my first choice, along with a couple of handguns and about 500 rounds for each gun.

Food and water come next. Remember, water will be needed for sanitation, as well as drinking. Ten gallons can go very quickly, so fill as many large jugs as you can, and don't forget to add the proper amount of bleach—1/8 teaspoon (8 drops) per gallon—to each jug to keep the water fresh.

A large, well-insulated cooler is also important for perishable foods from your refrigerator. With cold packs and ice, you should be able to keep food fresh for a couple of days and help your canned goods last longer. A charcoal grill or camp stove will allow you to cook outside. I have both, along with a supply of charcoal, lighters and white gas. And regarding sanitation: A good supply of 33-gallon trash bags will be vital to store trash and help prevent disease.

# Evacuation Basics

**1** This small first aid kit can be carried in a bug-out bag, where space for supplies is very limited. (Photo: Black Hills Ammunition)

**2** Author Dr. Martin Topper uses his CamelBak as a go bag, because its large pockets can hold all the gear he would need for surviving three days on foot. (Photo: Aimpoint)

**3** This battery-operated Streamlight LED lantern puts out 340 lumens. It can be very useful for routine power outages, as well as for natural and man-made disasters.

**4** A small, but powerful, LED flashlight with extra batteries can be invaluable. The author keeps one in his go bag and another in the glove compartment of his car.

**5** This LifeStraw is one of the fastest ways to obtain fresh drinking water when you're bugging out.

**6** Even though your smart phone has GPS, it's still important to have a backup lensatic compass in case the phone goes down.

**7** A small multi-purpose tool can be very useful. It's a must for a go bag. (Photo: Winchester)

**8** A waterproof match case is another must-have tool for a go bag.

**9** This AKM 247 from Inter-Ordnance is a good choice for both security and hunting.

**10** The DC-110V AC converter is kept in Dr. Topper's car. It allows him to operate just about any electric tool he might encounter during an evacuation.







# THE BEYOND-BASIC BUG-OUT KIT

When I first trained for evacuation, I was taught to assemble "bug-out bags." But the bag is usually the last resort. Chances of a successful evacuation increase markedly with a full evacuation kit stowed in the car.

The contents of my kit include:

## A CAMELBAK PACK WITH:

- ☛ Dry food for three days
- ☛ Matches in a waterproof match case
- ☛ Two small first aid kits
- ☛ Two ponchos
- ☛ Emergency aluminum space blanket
- ☛ Two compasses and a map
- ☛ Several sets of latex gloves
- ☛ Sanitary towels, single-use washcloths and glasses cleaner
- ☛ Winchester multi-tool
- ☛ Small, battery-operated radio
- ☛ Insect repellent
- ☛ Water purification straw
- ☛ LED flashlight with extra batteries
- ☛ Rope
- ☛ Tissues

## CAR CARRY GEAR:

- ☛ Pre-packaged personal financial information
- ☛ Trauma kit with compression dressings and tourniquets
- ☛ Several hundred dollars in small bills and change
- ☛ Hatchet and shovel
- ☛ Two tool kits with large and small tools
- ☛ Rubber boots
- ☛ AC/DC converter with 100-foot extension cord
- ☛ MREs, bottled water and cold packs

Finally, don't forget medical supplies, tools and batteries. I have a trauma kit in both cars that have everything in them, from dressings to antiseptics. This allows me to provide first aid for most minor injuries and stabilize ones that are more serious. I also keep at least six weeks of prescription and over-the-counter medications on hand.

As for tools, I have several tool kits pre-packaged, as well as an axe, hatchet and chainsaw for clearing debris. Finally, there are multiple fresh batteries for radios, lights and other tools

that require electric power, along with an AC/DC converter that will allow me to run a 110V line off my car battery, in case I need to run power tools.

## BUG OUT OR HUNKER DOWN?

In the end, each disaster is unique—as are the problems that each affected person faces. On the whole, it's probably better to shelter in place at home.

However, if you can't stay home, being prepared ahead of time will give you the best chance of safely evacuating. **ASG**

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# EMERGENCY SOLAR SYSTEM

**SEE HOW A TRIP TO HARBOR FREIGHT  
(AND A MERE \$100) CAN KEEP YOU  
POWERED UP 24/7.**

STORY AND PHOTOS BY DAVE STROM

**O**ur modern lifestyle requires power in huge amounts. With the flip of a switch, we have light, heat, news, weather and worldwide communication. Without it, life becomes dark, cold and dangerous. The dependence on this utility is so great that its loss is overwhelming for the average American. If there were to be a long-term power loss, cities would be in chaos.

Thankfully, there are many options for us today. In this article, we'll show a power system that's light, portable, reasonably priced and readily available.

## **WHY GO SOLAR?**

Gas or diesel generators certainly have their place. However, they are noisy, often drawing unwanted attention. Thieves took

many of these after Katrina. In addition, storing fuel is hazardous and must be treated with preservatives, as well as rotated. And, transporting everything in the family SUV is fraught with problems.

Solar power is a clean, lightweight and quiet solution. Additionally, there is a huge selection to choose from these days—from small solar walkway lights to large systems with enough power to operate your home. Most of us, however, need something small and easy to use and transport.

We're looking for enough power to charge phones, radios and scanners and HAM or other two-way communications equipment. In addition, we need light from lanterns and flashlights. We might also own a laptop; and with battery-operated lights, you can get work done at night with no fire safety concerns. There are small





"solar generators" you can assemble at home. These can be good systems, and you will learn a lot building one. On the other hand, if you don't want to do this, or you want to get something that's ready to run right out of the box, there are other solutions.

## DIY SOLAR

Harbor Freight Tools imports a huge number of tools and other items from China. It offers some good items you can use to assemble your own "common man's" solar power system.

You should be thoroughly familiar with your gear before you use it in the field—and definitely *before* an emergency strikes.

This system will ideally be light and portable. Also, as with a good .22 rifle, you never really outgrow a setup like this. You can take it on camping trips, picnics, beach jaunts or use it in the backyard. Send one with your college-bound child for their dorm room. And of course, you can store one in the car or SUV. In addition, every time you use it, you save a little on your power bill—a win-win in my book.

Most of these items can be found at Harbor Freight Tools, so it is a one-stop shopping proposition. However, you can mix and match with other power packs.

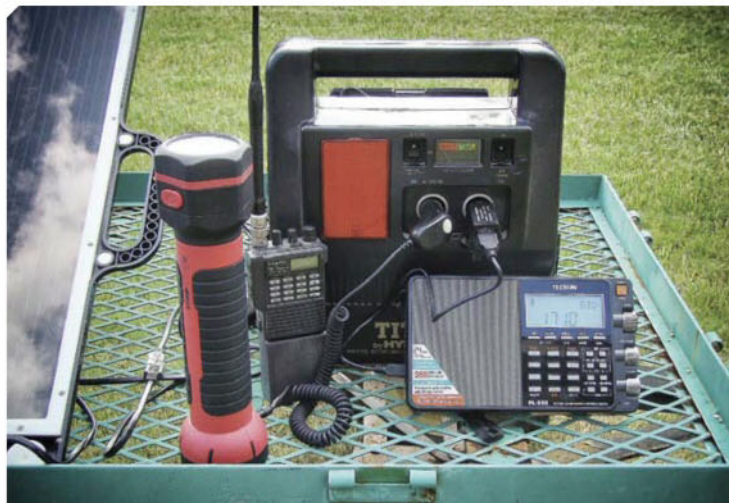
First, the solar panel power source: The Brief Case Solar Charger is a foldout, 13-watt panel that comes with several adapter cables. The connectors plug together only one way and cannot be reversed. One of these is a "female" cigarette jack; this is the one we will use here. Its part number is 68750, and its MSRP is \$79.99.

We now need a battery to store the power and a charge controller to prevent damage to the battery. Harbor Freight's 3-in-1 jump starter and power supply is good for both functions. It has a 17 amp-hour gel cell battery and cords to charge from a car cigarette lighter or 110 AC home power outlet. Built-in features include a light, charge controller and voltmeter with easy-to-read markings to indicate that the pack is ready or needs to be charged. This item's part number 38391, and its MSRP is \$49.

## SAVVY SAVINGS

Check gun and home improvement magazines for coupons for up to 20 percent off and note that these items go on sale regularly.

For testing, you will need a voltmeter to check voltage, polarity, etc. Harbor Freight offers a small unit for about \$6. Better yet,



› Just a few of the items that can be charged by this simple system. The AM/FM "short-wave" receiver is charging from the USB port on the cigarette lighter adapter. The HF LED flashlight is plugged directly into the cigarette lighter jack. The VHF radio had recently been charged from the pack. All these items can be charged for months via this small solar power system.

***"GAS OR DIESEL GENERATORS CERTAINLY HAVE THEIR PLACE. HOWEVER, THEY ARE NOISY AND OFTEN DRAW UNWANTED ATTENTION."***

there is often a "free-with-purchase" coupon. Harbor Freight's digital voltmeter will work fine for the beginner.

## POWERING UP

Using this little system is easy: Open the panel in direct sunlight, and fold out the built-in legs. This will hold the panel at about 35 degrees. Point it toward the sun; the little, built-in LED will be at its brightest when it's pointing correctly. Adjust this a couple of times during the day. Place the 12-/24-volt switch at the 12-volt position. Uncoil the cord, and plug the solar power system into the female cigarette lighter jack.

Next, set the power pack near the panels. I often place it in the shade that is created by the panels, themselves. Connect the male cigarette lighter cord to the power pack. Plug the other end into the female jack on the panels. The red light should come on when you start and will shut off when the unit is fully charged, because the controller is built in. Just three connections, and you are done. Simple and foolproof.

If you want to add some lighting, once again, Harbor Freight has a couple of options for this. I prefer the 2-in-1 36 LED work light (part number 60583). It's a flashlight with anti-roll collars that can also be extended into an area light. It's intended to work under the hood of a car but also works fine as a regular lantern. It has a magnetic base, so it can be placed on top of the fridge, stove, metal bench, etc.

› Two of the simple connections for the system. The third is at the back of the power pack.







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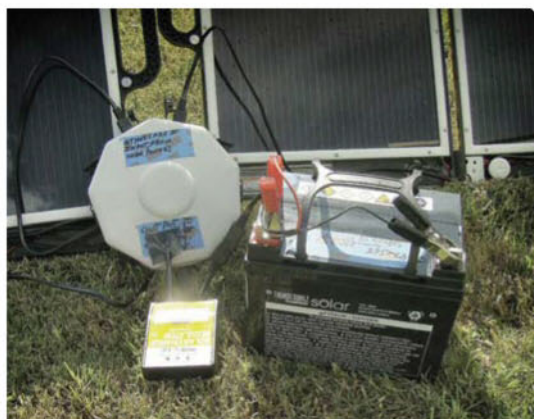
BUILT RUGGED. PROUDLY AMERICAN.



➤ This system is portable enough to be used in remote locations. A single panel can be coupled to an external charge controller to charge batteries you might be able to scavenge. Additional panels can be added via the hexagonal connector shown.



**“YOU SHOULD BE THOROUGHLY FAMILIAR WITH YOUR GEAR BEFORE YOU USE IT IN THE FIELD AND DEFINITELY BEFORE AN EMERGENCY STRIKES.”**



◀ Left: Notes on equipment serve as reminders to less-experienced users.

➤ Above: Available from Harbor Freight Tools, the small system will keep your group in light and communication for long periods. Deployed quickly, it works while you tend to other tasks.

The light comes with a built-in rechargeable battery and chargers for 110 AC and a cigarette lighter. Once your power pack is charged, you can plug the light in for a charge. This item runs about \$21; a bit less with a coupon. The LED “rope light” can be used by charging its AA battery in the Tenergy unit mentioned below and will give you several hours of safe lighting.

### POWER UPGRADES

You can also add a lot of other items to this one. A small inverter for 110 AC could operate small power tools, a CPAP machine, etc. Another is a 12-volt compressor—an item I strongly recommend. Just about any device you can charge or use from your car cigarette lighter can be charged with this power supply.

In an extended emergency, you might need to scavenge other batteries and charge them—perhaps a car starter battery or a deep-cycle battery from a boat, scooter, child’s toy car, UPS batteries or one



from a wildlife feeder. Although it might take time, the little panel can be used for charging these, as well.

But we also need an external charge controller. And, of course, Harbor Freight offers a solar charger controller for \$25. It features built-in protection for over and low voltage. Plug it in, and you’re in business.

If you are looking for more standby power, purchase Harbor Freight’s 12-volt, 35-amp universal battery (part number 68680). Place it in a plastic toolbox or plastic ammo can, add the charge controller above, along with cigarette lighter outlets, and you have almost twice



the power provided by the power pack.

If you decide to add more panels, you can buy the universal solar connector. This is a hexagon-shaped device with numerous plug-in connectors. You can add another briefcase panel or other panel. There is an output connector to send power to the charge controller, which has a plug to connect the alligator cable included with the panel. Connect the alligator clips to the battery, and you are charging from the sun.

For EMP shielding, keep these items in their shipping boxes and wrap with aluminum foil. Then, place them in another Faraday cage. It's likely these will survive in good condition.

Solderless crimp-on connectors, a crimping tool, wire, etc., will be needed if you want to cobble together cables. The two-pin connectors used here are often found at auto or trailer supply stores. Be sure to check polarity.

Other handy items are an AAA, AA, C and D cell charger. I like the Tenergy Model 9688. You can buy or make a 12-volt cord. This unit will charge up to four batteries and has a USB port. The Harbor Freight USB car charger is about \$7 and includes three cables. Plug this into the power pack to keep iPhones operational.

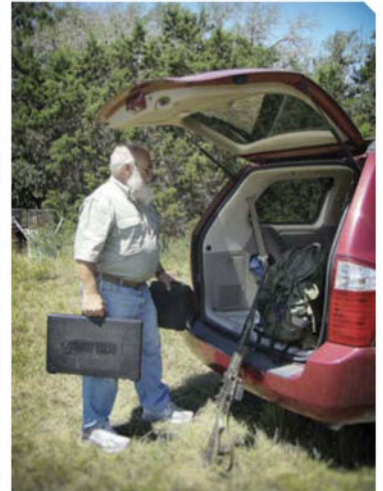
➤ This system is portable enough to be used in remote locations. A single panel can be coupled to an external charge controller to charge batteries you might be able to scavenge. Additional panels are light enough to transport. Note that just one additional panel doubles your energy output.

## GOOD TO GO

Harbor Freight can be found in many cities, making this gear readily available, even on a moment's notice. The system described here is simple to use and affordable. Harbor Freight also carries a larger solar power system.

And there you have it: a folding solar panel and a power pack system that weigh in at about 12 and 14 pounds, respectively, and together cost a bit over \$100. It can be deployed in minutes and is certainly small enough for a car. It can be carried in a pack to a remote location if needed. Just three foolproof connections, and you are in business. You now have a power source for light and for charging communications devices, as well as some power tools.

After a disaster, a lightweight and dependable power source is priceless. **ASG**



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# UNIFIED **FORCE** MULTIPLIER

**NAKED, BUT CERTAINLY NOT AFRAID, E.J. SNYDER  
AND LAURA ZERRA PROVE TEAMWORK IS THE  
ULTIMATE GET-HOME-ALIVE ESSENTIAL.**

BY MICHAEL D'ANGONA

PHOTOS COURTESY OF THE DISCOVERY CHANNEL

It might only take an instant to be plunged into a survival situation. Natural disasters, manmade attacks or even just getting lost in the woods while camping can cause you to go from having a seemingly normal day to a fight for life or death.

Because such emergency conditions can occur randomly and without notice, you could possibly find yourself paired with others sharing your own life-threatening predicament. It might be only one person or several on whom you can now rely for help throughout your ordeal ... *or can you?*

One would think that having one or more people to interact with during a crisis would be a no-brainer and a fortunate set of circumstances, but is it really? The addition of a partner, whether planned or as a result of a random coincidence, does have its benefits: an extra pair of hands, a second set of eyes, someone to talk to when no one is around and more.

Yet, be mindful. It might not always be in your best interest to put your faith—and sometimes, even your life—into others' hands. This double-edged sword can sometimes make a bad situation much worse. It's a fine line to be able to reap the benefits of partnership while minimizing the risk of failure, but it can be done.



## BUDDY SYSTEM BENEFITS

Having a partner during a survival situation offers a great number of benefits. First, you have an extra set of just about everything: an extra pair of hands to create shelter, gather firewood, build snares and traps, fish for food and any number of other campsite tasks.

Your partner can keep a lookout for natural predators lurking nearby, spot game you might have missed or prevent an accident when you are traversing the unpredictable outdoors.

When you're fatigued, your partner's "fresh legs" can scout for materials outside your camp zone and then help carry gear when it is time to move out.

In addition, your partner can aid you mentally and emotionally. Survival is not only a physically trying ordeal, it is also a game of mental toughness and fortitude. Your will to survive might deteriorate long before your body does, taking you out of the game prematurely. Your partner can pick you up out of this life-threatening slump and motivate you to continue on. While your mind may be shutting you down, your partner's words of encouragement might be louder, more forceful and just what you need to dust yourself off and complete your task—staying alive and getting yourself out of your unfortunate and unplanned situation.

Also, even if your situation is not dire or



◀ *Above:* When two people are inadvertently brought together during a survival situation, it can be beneficial for survival. But when one is injured, it can severely hamper mobility and chance for rescue. (Photo by Bigstock)

◀ *Below:* E.J. Snyder uses his primitive fishing skills to catch food to share with partner Laura Zerra.



***“IT MIGHT NOT ALWAYS BE IN YOUR BEST INTEREST TO PUT YOUR FAITH—AND SOMETIMES, EVEN YOUR LIFE—INTO OTHERS’ HANDS.”***

life threatening, having another person with whom to converse, joke around and discuss nonsurvival or regular topics can keep you grounded and lighten your already heavily burdened mind. It never hurts to have your morale pumped up during times of crisis.

Finally, scientifically speaking, humans are social animals. Being isolated for long periods of time without other human interaction has been shown to cause severe mental and emotional strain, which could further hinder your chances of continued survival.

## WHEN SOLO IS SUFFICIENT

Having a partner during a survival situation is not always your choice. Circumstances might put you together with someone you might know or a complete stranger who happened to be in the wrong place at the wrong time—similar to you. You could also meet up with your partner halfway or so through your emergency ordeal, further throwing a wrench into your already organized survival plan.

The fact is, you rarely know when or where a partner might turn up; you must be prepared if they do.

The ability to “size up” your partner is a twofold process. The first impression is, no doubt, important, but as your situation worsens, your ability to notice signs of change within him or her is also equally, if not more, critical.

On first impression, does your partner seem upbeat and motivated to become a team member? If not, be cautious. Their need to become the leader or to dominate decision-making can put you in conflict with them. It can perhaps put you in peril, as well, if you don't intervene and stop the order-barking early on.

Ask them about their skill level, if any, that they could use to contribute to a possible partnership. If they appear knowledgeable about their abilities and have a skill set that complements your own, that's a good sign. If they stutter, talk in circles and relay no useful information, it's time to move on.

Their only motivation could have been to leech off your own set of skills, allowing you to keep them alive. Or perhaps they eyed your gear and supplies, wanting those items for themselves. Remember: Harsh survival conditions, a recent natural disaster or an emergency can turn relatively good people bad and cause them to do just about anything to continue living. Consequently, always be highly vigilant when coming into contact with others.

As time passes while under survival conditions, people can change their mental outlooks, depending upon their physical situations. Starvation, lack of water and isolation can all





**“... WHILE UNDER SURVIVAL CONDITIONS, STARVATION, LACK OF WATER AND ISOLATION CAN ALL CAUSE A NEGATIVE PERSONALITY CHANGE.”**

**AMERICAN SURVIVAL GUIDE:** WHAT IS THE GREATEST BENEFIT OF HAVING A PARTNER DURING A SURVIVAL SITUATION?

**LAURA ZERRA:** Having a partner in a survival situation is hugely important for your psyche. Going for a few days at a time alone can be fun, but when that starts to stretch into weeks, you really learn how much we are designed to exist with other humans.

**E.J. SNYDER:** Someone who can have your back. Someone you can count on and share the load in survival tasks. It's also always easier to cope with the situation when you are going through a tough experience to have someone there to talk to about it.

**ASG:** DO YOU PREFER PARTNERS WITH OPPOSITE OR SIMILAR SKILLS THAN YOURSELF?

**ZERRA:** It's always great to have someone with opposite and complementary skills so you can both be accomplishing different tasks. That being said, I believe that being out there with anyone who has good communication skills and a strong work ethic is more important than any one specific skill.

cause a negative personality change. Read the danger signs! Conflicts over minor details can lead to constant fighting with your partner and eventually to a physical conflict that could result in severe injury ... or possibly your own death.

## DYNAMIC DUO

Two people who know firsthand about interacting with a partner during a survival situation are E.J. Snyder and Laura Zerra, who comprise one of the most successful survival teams from the popular Discovery show, *Naked and Afraid*.

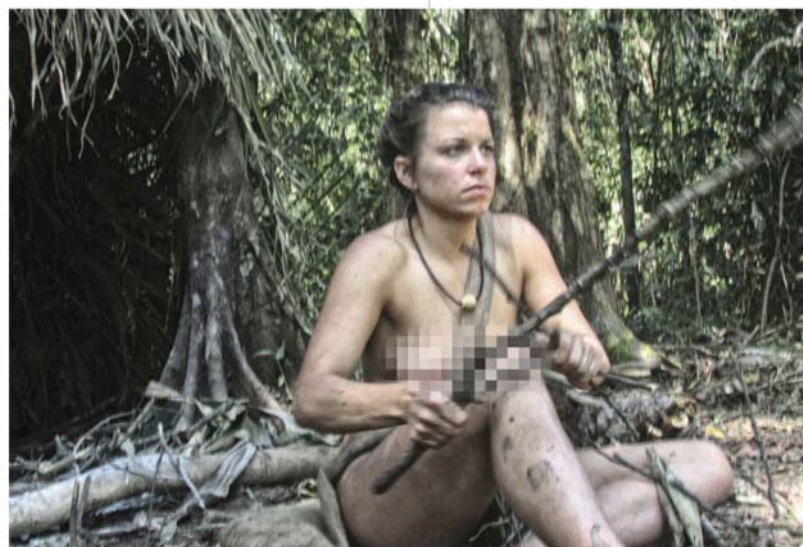
For 21 days, Snyder and Zerra endured one of the most hostile and unforgiving environments on the planet—the Amazonian rain forest. With no clothes, no food, no water and only one survival item each, they had to brave the harsh elements, build shelter, create fire and, most of all, rely on one another's physical and mental contributions.

It was no easy task, by any means, but the two not only survived for 21 days, they also created a very strong bond between them to last a lifetime. They now share their views on a successful partnership that can certainly be applied to a survival situation; however, it is one that can also work when faced with challenges in one's daily life.

*American Survival Guide* recently had a chance to pick Snyder and Zerra's brains. Our hope is that the following Q&A can be your guide to building successful partnerships—wherever life takes you.

◀ Shelter-building and other campsite tasks can be split between both partners to help conserve needed calories and increase their rate of production.

◀ E.J. Snyder and Laura Zerra exhibit the mental, physical and emotional strength needed to survive the harsh outdoors. They also know full well that a competent partner is an important key to success.





**SNYDER:** Someone who can complement your skill set. Someone who is stronger at things you're not as good at and vice versa. I found that this always makes for the best team.

**ASG:** WHEN YOU AND YOUR PARTNER HAVE CONFLICTING IDEAS ABOUT YOUR NEXT COURSE OF ACTION, HOW DO YOU PROCEED?

**ZERRA:** Good communication is key. In a survival situation, you don't have time or energy to waste on excessive arguments, drama and grudges. It is absolutely necessary to be able to put your ego aside and really listen to the other person's perspective.

**SNYDER:** Conflict is not always a bad thing. It presents a great opportunity for you and your partner to grow stronger as a team. You have to have an open discussion with good, honest dialog, hear each other's points of view and ideas, and come to a suitable compromise if need be.

**ASG:** DO YOU BENEFIT MORE PHYSICALLY OR MENTALLY FROM YOUR PARTNER UNDER SURVIVAL CONDITIONS?

**ZERRA:** I believe you mentally benefit more from having a partner. Having someone there gives you a shared experience and a feeling that you're not alone; you share the failures and successes, the storms and the sun, the starvation and the food. This can't be understated.

**SNYDER:** I think it's a little of both, honestly. You have someone to help equally with the physical efforts it takes to survive. The old adage, "Two heads are better than one," always rings true in a survival situation.

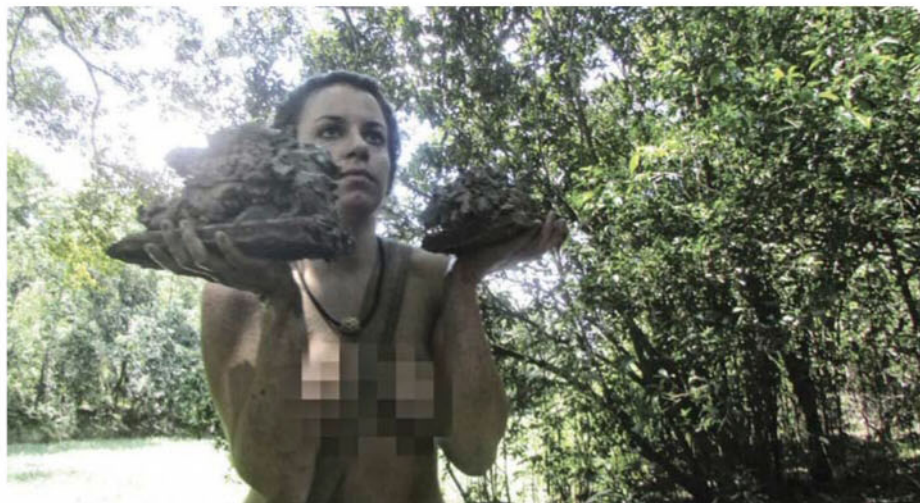
**ASG:** SHOULD ONE MEMBER OF THE DUO TAKE A LEADERSHIP ROLE, OR SHOULD BOTH DELEGATE EQUALLY?

**ZERRA:** When you have two partners, you have to be able to treat each other with respect and as equals.

**SNYDER:** I found that in most cases, when you have a team, someone needs to be—and has to be—the quarterback. So, when you have a partner or partners with equal abilities, you can operate under an understanding of delegated leadership based on tasks. It does make more sense to put the one with the most experience and most skill in charge of certain tasks to ensure they are properly and more efficiently executed.

**ASG:** WHEN CAN HAVING A PARTNER BE DETRIMENTAL TO, OR WORSEN, YOUR CURRENT SURVIVAL SITUATION?

**ZERRA:** Having a partner who is not



› Above: Mundane daily tasks can be split between two partners, thereby increasing their productivity while reducing fatigue and loss of calories and water.



› Right: Even though having a partner can add a second mouth to feed, the ability to hunt and catch food can be performed by both people, thereby doubling their chances of securing a meal.

willing to work or who is in a terrible emotional state can be devastating to your own experience. It is downright miserable to be out there with someone who is negative.

**SNYDER:** When your partner becomes injured or sick, that puts extra strain on you to have to handle all the survival tasks for both of you. You also have to take care of your partner's medical needs. If your partner isn't carrying their share of the task load, or their skill set isn't where it would need to be, you have to work harder and do more. Also, if your partner has their own agenda, that doesn't help the team at all.

**ASG:** THE MORE THE MERRIER? OR IS ONE, GOOD PARTNER BETTER THAN MANY?

**ZERRA:** With just two people, it is much easier to have clear communication and to know what your roles in the group are.

**SNYDER:** I prefer one good partner. With one partner, it's easier to stay on the same page and reach common goals.

**ASG:** IN YOUR OPINION, WHAT THREE TRAITS OR CHARACTERISTICS WOULD DESCRIBE THE ULTIMATE SURVIVAL PARTNER?

**ZERRA:** Humble, hardworking and optimistic.

**SNYDER:** Mental toughness, complementary survival skills and a great, positive attitude. **ASG**



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A close-up photograph of a person's hand holding a Mossberg 590A1 pump-action shotgun. The shotgun is black with a textured pump handle and a black barrel. The hand is positioned on the pump handle, ready to operate the action. The background is a blurred green forest, suggesting an outdoor setting.

**PUMP UP YOUR PREPPER ARSENAL WITH THE SEVEN-SHOT, FEATURE-PACKED AND VERSATILE 590A1 SCATTERGUN.**

TEXT AND PHOTOS BY GARRETT LUCAS

# **MOSSBERG'S NEW MAYHEM- STOPPER**







**“THE VITAL-SHOK LOAD’S ABILITY TO PRINT TIGHT PATTERNS AND THE MOSSBERG’S SUBSTANTIAL RECOIL PAD MADE AN EFFECTIVE COMBINATION FOR STAYING ON TARGET WHILE QUICKLY PUTTING ROUNDS DOWN RANGE.”**

◀ The model reviewed by author Garrett Lucas was finished completely in Kryptek’s Typhon camouflage—suitable for urban environments.



◀ Below: The Mossberg 590A1 and Federal Premium’s 2¾-inch Vital-Shok rounds were an excellent combination for tight patterns between 20 and 40 yards.



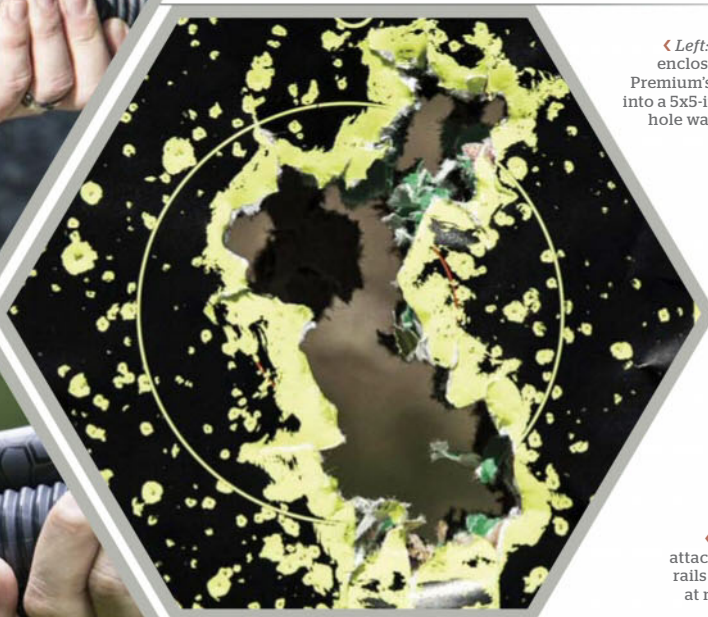
**G**rowing up in a rural and impoverished area makes you look at things differently as you progress through your years. You not only appreciate the value of something nice but also the value of something that’s reliable and versatile.

In the southwestern part of West Virginia, not everyone could afford a nice rifle for hunting or sport; in fact, not many could at all. A handgun was considered a luxury item if it wasn’t passed down through the family. The shotgun was the “everyman’s” gun.

Whether hunting squirrel, rabbit, turkey, grouse or deer, you got by with the 12-gauge that was found in every home. When something went bump in the night deep in the holler—30 minutes away from the nearest law—it was the 12-gauge shotgun that was brought out to defend the family. It was a necessary and ubiquitous weapon that was a tool for many jobs.

One company that has helped feed many families and defend their homes and even protect their nation through the decades is O.F. Mossberg & Sons. Almost 100 years old, Mossberg is the largest seller of pump-action shotguns in the world, and the 500-series of shotguns released back in 1961 has helped the company pave the way to its success.

Despite this company’s long-standing history in the firearms industry, Mossberg continues to innovate and update products to meet the needs of people, not only across our nation, but



◀ Left: To simulate shooting within an enclosed space, two rounds of Federal Premium’s LE Tactical 00 Buck were fired into a 5x5-inch target at 25 feet. The largest hole was from the Flitecontrol wad that also went through the target.

◀ Far left: A SureFire X-400 Ultra attached to one of the Picatinny side rails provides plenty of illumination at night to identify and engage any threats.





➤ *Right:* The forend has a textured surface for a positive grip while engaging the pump action; it also has a Picatinny rail along the underside.



➤ *Far right:* The elements that separate the 590A1 from other Mossberg 500-series shotguns are a metal trigger, metal safety, metal trigger guard and a heavy-walled barrel.



throughout the world. One example is a release for 2016 that we received for review—the new seven-shot 590A1 with a Kryptek Typhon finish.

In broad strokes, the main difference between the 590A1 model and the 500 or 590 models is that the trigger guard, safety and trigger are all constructed of metal rather than polymer. In addition, the barrel has a heavy-walled construction. These differences allow the Mossberg 590A1 to meet military specification MIL-S-3443E, resulting in tens of thousands of 590A1s to be procured and used by different services in the military.

### 590A1 DETAILS

Like other 500-series shotguns, the new 590A1 sports twin action bars, an anti-jam elevator, an anodized aluminum receiver and an ambidextrous tang safety that can be easily utilized by both left- and right-handed shooters. This particular model comes with an 18.5-inch cylinder-bore barrel—a standard type for tactical shotguns. But beyond the general build specs, the version we received had a couple of extra, nonstandard features that separate it from other models.

Until this year, 590-type shotguns with an 18.5-inch barrel were limited to a total of six rounds—five in the tube and one in the chamber. An enhancement made to the system was implemented to allow the storage of six rounds in the magazine instead. This is a 20 percent increase in capacity over previous models. While the 590A1 has a 3-inch chamber, the round count is based on 2¾-inch shells.

Another nice feature on the Typhon-camo version is the incorporation of a ghost ring sight with a bright, reflective orange ramp on the front end. This makes fast target acquisition an easier task, and it's also easier to track the front sight due to its higher visibility.

Finally, Mossberg included its tri-rail system on the forend, which includes two short Picatinny rails at the 9 and 3 o'clock positions, with a long rail at the bottom of the forend. These are perfect spots to add accessories, but I personally wouldn't add too much because of the gun's bare weight and front-heavy bias.

We did, however, attach a SureFire X-400 Ultra G light/laser to a side rail because of its relatively light weight and its utility to illuminate

➤ *Below:* One prominent feature of the sample model is the ghost ring sight with a protective enclosure. It is adjustable for both windage and elevation.

both an area and target with its 500 blinding lumens of light.

### VERSATILE TOOL

It seems that the common shotgun sometimes gets short shrift when people consider a suitable, all-around firearm for surviving





a catastrophe or disaster, and that shouldn't be the case. The shotgun, particularly one as well designed as the 590A1, is an extremely versatile tool.

Unlike other firearms, it can be practically used to take any game or fowl in the country, which can't be said of other arms. Yes, a rifle can be used to take down a moose, but can it reliably take out a bird on the wing? While the 590A1's 18.5-inch barrel isn't ideal for hunting fowl, with the right load, it can certainly get the job done within a reasonable range.

With slugs, it can be used to hunt and protect against dangerous large game, and 00 Buck loads are viable for deer hunting and protection from the most dangerous predator of all—man. It won't be the ideal choice for some uses, but it's a pretty good compromise when considering what's available on the market.

Finally, the pump-action shotgun is a universally recognized tool. It's known for its power and fairly simple manual of arms. Also, for those folks who don't constantly practice on their accuracy, a shotgun such as the 590A1 can help in that area. While the point-and-shoot method isn't nearly as effective as some folks might believe, with the right load, the shotgun does offer a certain margin for error when it comes to hitting the intended target.

## HANDLING

There's a certain cachet that goes with having the "MIL-SPEC" shotgun. It is certainly more robust and able to easier handle the rigors and trials that go with being used in combat conditions or simply deployed every single day.

However, there's a price that goes with heavy-duty construction.

The extra weight of the thicker barrel can slow down maneuverability, and it adds a little more strain while carrying it for extended periods of time—especially because this new version adds an extra round to the magazine's capacity. Our model tipped the scales at 7.2 pounds while empty. Throw seven rounds into the mix, and you've got a hefty rig to tote around.

That said, it's built hell-for-stout and can handle the extra abuse it might receive under harsh conditions and

## SPECIFICATIONS

# Mossberg 590A1 Shotgun

- › CALIBER: 12-gauge
- › CAPACITY: 6+1
- › CHAMBER: 3 inches
- › BARREL LENGTH: 18.5 inches
- › WEIGHT: 7 pounds
- › LENGTH: 39.5 inches
- › CHOKE: Cylinder bore
- › SIGHT: Ghost ring
- › FINISH: Kryptek Typhon Camo
- › MSRP: \$683

› The ghost-ring sight and the easy-to-pick-up front sight work well together for quickly engaging the target.

**"... IT'S BUILT  
HELL-FOR-STOUT  
AND CAN HANDLE  
THE EXTRA ABUSE  
IT MIGHT RECEIVE  
UNDER HARSH  
CONDITIONS AND  
CONSTANT USE."**



➤ The front end of the 590A1 sports a high-visibility orange front sight and a short Picatinny rail on each side of the barrel for the addition of accessories.



the copper-plated Vital-Shok 00 Buck loads and firing them as quickly as possible from 20 yards. At just a hair under six seconds, we were able to keep all six rounds within a 6.5x8-inch area. The Vital-Shok load's ability to print tight patterns and the Mossberg's substantial recoil pad made an effective combination for staying on target while quickly putting rounds down range.

Another test we tried was shooting two rounds of Federal's LE Tactical 00 Buckshot at a 5x5-inch target at 25 feet. This was to simulate shooting down a hallway if an intruder had broken in. The sights were dead on, and the Flitecontrol wads almost did too good a job—with each



constant use. One thing I really liked about this model was the vertical texturing on the forend. Like large serrations, they provided a positive grip on the firearm while pumping the slide during rapid-fire sequences. They worked equally well with bare or gloved hands.

#### **TRIAL BY FIRE**

Of course, the real fun doesn't start until the firing commences, and that was easy enough with the loads we had on hand. We brought a good supply of Federal Premium's Vital-Shok 2¾-inch 00 Buck loads, as well as its 2¾-inch Tactical LE 00 Buckshot. Both of these loads utilize Federal's Flite-control wad, which helps produce very tight patterns at longer distances.

We ran through a few scenarios while shooting the Mossberg to gauge how it shot, how it handled and to see how it printed with the ammunition we had on hand.

One example was when we took turns loading the magazine with six rounds of

#### **SOURCES**

› **O.F. MOSSBERG & SONS, INC.**  
(800) 363-3555  
[WWW.MOSSBERG.COM](http://WWW.MOSSBERG.COM)

› **BLACKHAWK!**  
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# BLACKHAWK! TACTICAL APPAREL

New for 2016 is Blackhawk's apparel line, designed to meet the needs of shooters on or off duty. The new line includes seersucker shirts, performance polos, tactical and field jackets, and pants for duty or casual wear. Features available on different items include reinforced construction and rip-stop fabrics that repel water, oil and stains. Some items can provide up to UPF 50+ sun protection, depending on the user's selection.

Included in this review are images of Blackhawk's slate-gray Convertible shirt and black Pursuit pants. The Convertible offers great breathability with the inclusion of a back vent, and it has faux buttons with a snap placket to allow for easy access to a firearm. Treated with Teflon Shield, the rip-stop fabric protects against oil and other environmental elements. Side-access pockets round out the package. MSRP: \$74.99 to \$79.99, depending on the size.

Blackhawk's Pursuit pant, also coated with Teflon Shield, incorporates a flexible action waist, reinforced knees (interior slot for pads) and a durable, but comfortable, rip-stop material that is both breathable and quick drying. A variety of pockets adorns the pant to provide quick and easy access to tools and other items. **MSRP: \$69.99 to \$79.99**



Top and left: Blackhawk's new shirt, the Convertible, is roomy, has a UPF rating of 50+, is water-, oil- and stain-repellent, and is breathable to allow for quick drying after action.

Right: Blackhawk's black Pursuit pants incorporate a variety of pockets for tools and other necessary items.

of the two rounds creating just a single large hole but both hitting within the 5x5-inch square.

While this is excellent control over a pattern, it does illustrate how it's possible to miss a threat with a shotgun, even at short distances—never mind the penetration factor of 00 Buck. That's why patterning your shotgun and proper load selection for the task at hand are critical parts of making sure your weapon is ready to do the job.

## LAST SHOTS

During several shooting sessions, we didn't have a single malfunction, jam or any issue with the slide binding, despite the rigorous effort we put into rapid-fire shooting tests. In fact, the action was smooth, and the sights were easy to pick up. The felt recoil was minimized by the recoil pad and the extra weight of the heavy-walled barrel.

The average trigger-pull weight came in

**"IT'S AN EXTREMELY VERSATILE WEAPON THAT CAN HANDLE A WIDE RANGE OF JOBS, FROM TAKING SMALL TO LARGE GAME AND FOWL TO SERVING AS A MORE-THAN-CAPABLE DEFENSIVE WEAPON AT HOME OR ON THE ROAD."**

at 6.4 pounds—that more than suffices for a firearm intended to serve as a tactical weapon. After firing it during three range sessions, I was impressed by the handling and reliability of the 590A1 Typhon. The fit was tight, the Kryptek finish was cleanly applied, and the ghost ring sight system was on point for the type of shooting for which this model was made.

I made some silly choices on firearms back in my early years, and I think I've learned a bit after all this time. Had I the ability to turn back the hands on the clock to when all my preparedness efforts began, my first choice for a do-it-all survival weapon would be a rugged pump-action shotgun.

It's an extremely versatile weapon that can handle a wide range of jobs, from taking small to large game and fowl to serving as a more-than-capable defensive weapon at home or on the road.

This new, enhanced version of Mossberg's 590A1 is the perfect candidate to conquer the role of a multi-purpose firearm and, in turn, it will help you conquer the world that lies ahead. **ASG**



# JANTZ

## knifemaking.com



### Pattern 41 Blades

Overall Length: 7 5/8", Blade Length: 3", Width: 1", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4198	1095	Satin	24.95
J419K	1095	Black Teflon	24.95
J4127	D2 Steel	Peened	32.95
J4128	D2 Steel	Satin	32.95
J4137	CPMS 30V	Peened	42.95
J4138	CPMS 30V	Satin	42.95
J4189	Damascus	Random	79.95

### Pattern 42 Blades

Overall Length: 6 5/8", Blade Length: 2 5/8", Width: 7/8", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4298	1095	Satin	24.95
J429K	1095	Black Teflon	24.95
J4227	D2 Steel	Peened	32.95
J4228	D2 Steel	Satin	32.95
J4207	440C	Peened	32.95
J4208	440C	Satin	32.95
J4257	CPM154	Peened	39.95
J4258	CPM154	Satin	39.95
J4289	Damascus	Random	69.95

### Pattern 44 Blades

Overall Length: 6 1/2", Blade Length: 2 1/2", Width: 1 1/8", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4498	1095	Satin	24.95
J449K	1095	Black Teflon	24.95
J4427	D2 Steel	Peened	29.95
J4428	D2 Steel	Satin	29.95
J4407	440C	Peened	29.95
J4408	440C	Satin	29.95

### Pattern 45 Blades

Overall Length: 7 3/16", Blade Length: 3 1/4", Width: 1 1/16", Thickness: 1/8"

CAT.#	STEEL	FINISH	PRICE
J4598	1095	Satin	24.95
J459K	1095	Black Teflon	24.95
J4527	D2 Steel	Peened	32.95
J4528	D2 Steel	Satin	32.95
J4507	440C	Peened	32.95
J4508	440C	Satin	32.95
J4589	Damascus	Random	79.95



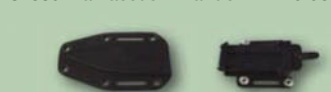
CAT.#	SHEATH	PRICE
KT410	Kydex	12.95
KT455	Kydex Belt Clip	9.95



CAT.#	SHEATH	PRICE
KT420	Kydex	12.95



CAT.#	SHEATH	PRICE
KT440	Kydex	12.95
KT455	Kydex Belt Clip	9.95



CAT.#	SHEATH	PRICE
KT450	Kydex	12.95
KT455	Kydex Belt Clip	9.95

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### Pattern 31 Blades



Overall length 7 5/8", Blade Length 3", Blade Width 1 1/8", Blade Thickness 5/32". Bolster holes 1/8", Handle Holes 1/4", Thong Hole 1/4". Cryo Tempered.

CAT.#	STEEL	FINISH	HRC	PRICE
J3128	D2	Satin	59-61	31.95
J3148	154CM	Satin	58-59	35.95
J3198	1095	Satin	57-58	24.95
J319K	1095	Black	57-58	24.95
J3189	Damascus	Etched	58-60	99.95

### Handles for Pattern 31



Contoured and textured handles for Pattern 31. Cut slightly oversized for proper fitting. More handle options are offered online.

#### Handles Smooth No Texture

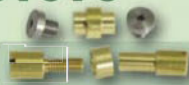
CAT.#	COLOR	MATERIAL	PRICE
D3149	Bl./Cocobolo	Dymondwood	16.95
G3119	Black	G10	18.95
G3129	Red	G10	18.95

#### Handles Basket Weave Texture

CAT.#	COLOR	MATERIAL	PRICE
M3131	Red	Micarta	16.95
G3111	Black	G10	21.95
G3131	Orange	G10	21.95
G3151	Olive Drab	G10	21.95

### Rivets/Pattern 31

Torx Screw for use with the G10 textured handles. Corby rivets for use with Dymondwood handles for flush surface.



CAT.#	TYPE	ALLOY	PRICE
B451	Torx	Brass	3.95
A461	Torx	Stainless	4.95
B660	Corby	Brass	3.49
A624	Corby	Stainless	3.49

### Bolsters/Pattern 31

260 brass and 410 stainless, with matching pins. 3/16" for G10 contoured handles and 1/4" for Dymondwood handles.



CAT.#	THICK	ALLOY	PRICE
K311	3/16"	Brass	6.95
K316	3/16"	Stainless	6.95
K313	1/4"	Brass	6.95
K314	1/4"	Stainless	6.95

### Pattern 36 Blades



Overall length 7 5/8", Blade Length 3", Blade Width 1", Blade Thickness 1/8". Bolster holes 1/8", Handle Holes 1/8", Thong Hole 1/4". Flat ground.

CAT.#	STEEL	FINISH	HRC	PRICE
J3628	D2	Satin	59-61	31.95
J3638	CPMS30V	Satin	59-61	41.95
J3608	440C	Satin	57-58	31.95
J3698	1095	Satin	57-58	24.95
J369K	1095	Black	57-58	24.95
J3689	Damascus	Etched	58-60	74.95

### Handles for Pattern 36



Contoured and textured handles for Pattern 36. Cut slightly oversized for proper fitting. More handle options are offered online.

#### Handles Smooth No Texture

CAT.#	COLOR	MATERIAL	PRICE
D3653	B.I./Rosewood	Dymondwood	16.95
E3601	Birdseye Maple	Wood	24.95
E3672	Desert Ironwood	Wood	39.95

#### Handles Basket Weave Texture

CAT.#	COLOR	MATERIAL	PRICE
G3610	Black	G10	21.95
G3630	Orange	G10	21.95
G3650	Olive Drab	G10	21.95
G3660	Blue/Black	G10	21.95

### Pins/Pattern 36

Handle pins available in brass and stainless steel. (Set of 6)



CAT.#	SIZE	ALLOY	PRICE
B826	1/8"	Brass	1.99
A846	1/8"	Stainless	1.99

### Bolsters/Pattern 36

Bolsters are oversized, for proper fitting and include two matching pins. Dry fit bolsters and polish front edges before peening it to the blade.



CAT.#	THICK	ALLOY	PRICE
K363	3/16"	Brass	6.95
K364	3/16"	Stainless	6.95

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# ***FIRECRAFT MASTERY***

**NO MATTER YOUR AGE, NO MATTER THE  
TIME OR PLACE, HERE'S HOW TO STRIKE  
UP A FIRE IN SECONDS FLAT.**

BY BRIAN GRIFFIN



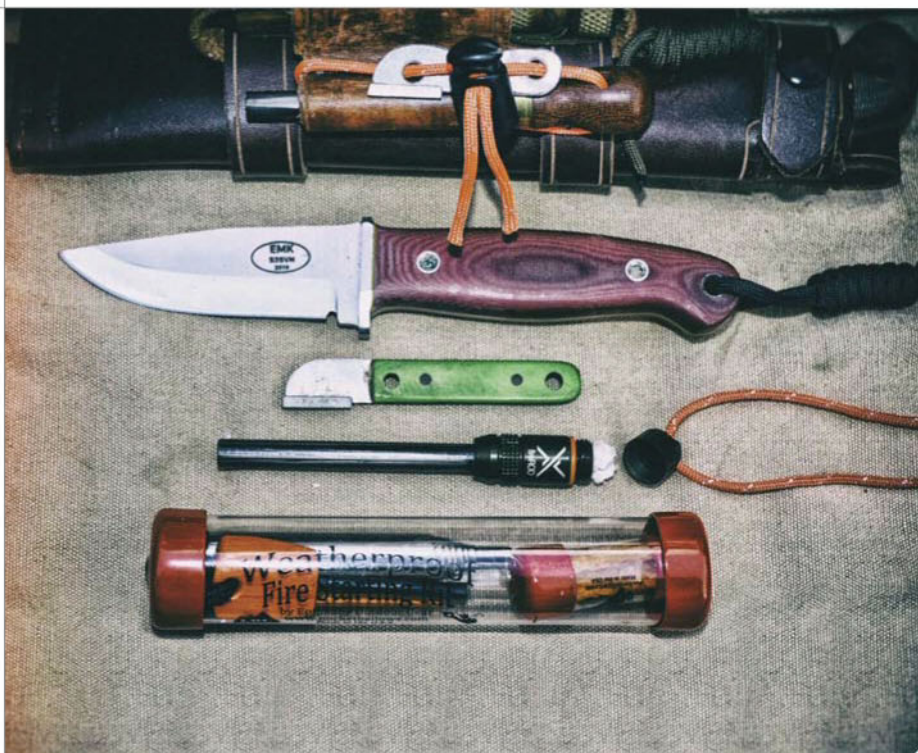
◀ Cold-weather injuries can be very dangerous, so during the winter, author Griffin practices redundant systems. He has outfitted his daughter's knife sheath with a ferro rod with a tinder compartment in the handle and a dedicated striker. The two are secured to the sheath via a section of FireCord and a cord-lock. He also added an E.O.G. "Weather-proof Fire Kit" in her pack.

**H**ow early on should we be teaching wilderness skills to children? I believe the best age varies, because it depends on the child, as well as the circumstances.

I enjoy the outdoors very much, so the way I approached things was to start teaching my daughters some things as soon as they started going on short hikes with me. I began teaching my youngest some knife skills with a modified paring knife when she was 3 and expressed an interest in helping me in the kitchen. I progressed from there.

### FIRE IS YOUR FRIEND

Because firecraft can be important in all seasons and is a complex subject, it is something I start on early. In the winter,



◀ Below: The E.O.G. Baddest Bee Fire Fuse is one of author Griffin's favorite tinder materials for all-weather use. With the end fluffed, it will ignite very easily—which helps when working with fatigued, cold hands.

**"... A SYSTEM OF FIRE-STARTING THAT WORKS WELL UNDER RAINY AND WINDY CONDITIONS WILL WORK JUST AS WELL UNDER DRY, CALM CONDITIONS."**



the ability to create fire will provide warmth that can save life or limbs.

But warmth is not the only benefit of fire, and it can be very important during the other three seasons, as well. We all know fire allows one to cook, purify water, signal for help, light the darkness and offers one form of defense against predators.

These are the most common applications. However, the morale-boosting effect of being able to create fire at will is also very important.

Just knowing you have that skill instills a sense of security that aids in maintaining a positive mental attitude. This is a critical aspect of surviving adverse situations. I approach things based on the idea that if something happens to me while we are out, I won't be much help to my kids—but the things they've learned will be.

Thus, for firecraft, I begin with an ignition system and a fire lay that will work, even under the most adverse conditions, because a system of fire-starting that works well under rainy and windy conditions will work just as well under dry, calm conditions.

### WE HAVE IGNITION

For ignition, I start with a ferro rod and a dedicated striker, even though my primary ignition systems in the field are lighters and matches. I begin this way, because mechanical devices can fail, fuel cells can leak, and matches are unpredictable.

Ferro rods are consistent in their function, and they work the same at any temperature and/or elevation. Once a person has the striking technique down, they will be able to produce those same sparks, regardless of climate or geographic location. The sparks from a ferro rod can be used to ignite a wide variety of materials, both chemical and organic.

The tinder materials I use for these lessons and provide for my daughter Alayna's kit are accelerants I have tested on several occasions. I know they will ignite easily, and they work well under wet conditions.

**“A GOOD RULE OF THUMB ON DIAMETER SIZE IS ‘TOOTHPICK, PENCIL AND FINGER,’ SEPARATED INTO THREE PILES OF LIKE SIZES.”**

My favorite is the Baddest Bee Fire Fuses by Epiphany Outdoor Gear. They take a spark well, are not volatile, have a good burn time and are even 100 percent organic. I also like Fire Cord by Live Fire Gear. Repeated experience with the ferro rod with these materials will also come in handy later on, during more-advanced lessons with natural tinder materials.

#### LAYING THE FOUNDATION

Preparation is always the key to successful fire-starting. How the tinder, kindling and fuel are placed is critical to achieving sustained fire in one go. Because heat radiates in all directions from its source, it is important to harness as much of it as possible when starting fires under wet conditions.

To do this, I use a fire lay that allows me to vector the heat where I need it most—upward through the damp wood. The first step is to find bigger hunks of wood or

◀ *Below bottom:* This series of photos is of my daughter igniting a fire. They were shot at six frames per second. You can see how the cord is prepped for ignition in the first frame. With a single spark from a ferro rod—which takes under 1.3 seconds to produce—the tinder is aflame, and the kindling is burning soon after.



# FLAMMABLE ZIPPER PULL

The tinderZIP zipper pull, from Exotac Inc., is a nifty, new piece of gear. The tinderZIP can help turn any pack with zippered compartments into an emergency fire kit. And it hides in plain sight! It is a replacement zipper pull made from a basic version of Live Fire Gear's FireCord, which doesn't contain the white strands, unlike regular 550 cord. This cord is smaller, and it contains only the flammable, red tinder material.

The zipper pull is simple to install: Pop open the keeper on the plastic pull tab, put one end of the cord through the hole of the zipper, and snap the pull tab back onto the ends of the cord.

I find the can opener of a Swiss Army Knife works well for this, as does the flat screwdriver of a multi-tool. When accessing the cord in an emergency and under stress, if the only tool you have is a pointy knife blade, I suggest just cutting the cord close to the tab to avoid risking a hand injury. You will lose approximately a ½ inch of cord this way. Nevertheless, knowing this is how I would use it in a worst-case scenario, I have done this every time I have tested it. It hasn't failed me yet, even under very wet conditions.

Every time I have used the zipper, I have proceeded as follows:

- ◀ Cut the cord at the pull tab;
- ◀ Separate the inner core from the outer shell;
- ◀ Flare and fuzz one end of the red core;
- ◀ Ignite it with a ferro rod; and
- ◀ Place the kindling, and watch the fire come to life.

Just remember that proper preparation of the kindling material is key. Each cut tinderZIP burns for approximately 1.5 minutes; this is plenty of time if you have prepared your fire lay properly.





## “HOW THE TINDER, KINDLING AND FUEL ARE PLACED IS CRITICAL TO ACHIEVING SUSTAINED FIRE IN ONE GO.”

large stones that will be placed in two parallel rows to serve as a two-sided chimney of sorts. The base of a larger rock can serve as one side of this chimney, as well as a heat reflector.

With the sides of the chimney in place, the next step is to gather the larger branches, preferably wrist diameter, for the actual fuel. This is the part of the fire lay that is the least sensitive to moisture from contact with the ground as you collect it. The more fuel gathered at this point means more time next to the fire before needing to gather wood again.

Next, some of these are arranged in a pattern that resembles a small raft without the lashing. This is a better place to gather the kindling as it is processed, rather than simply laying it on wet ground. A good rule of thumb on diameter size is “toothpick, pencil and finger,” separated into three piles of like sizes. It will require at least big, double handfuls of each to produce the heat needed for sustained fire. The more of each, the better.

Next, place enough larger pieces lengthwise between, and parallel to, the chimney walls—enough to fill the space between them completely. Then, place a couple of finger-sized twigs across the center to keep the kindling off the tinder. The fireplace is now complete.

### LIGHT 'ER UP

Once the fuel and kindling are processed, separated and ready to go, the tinder is placed in the center of the base and ignited. A small piece of bark to lay the tinder on will make igniting it easier.

Then, working from smallest diameter to largest, the kindling is placed lengthwise on the burning tinder between the chimney walls. The walls prevent heat from radiating outward on two sides of the fire's base and cause it to rise through the center of the fire lay. As that heat rises, it pulls more oxygen in



◀ FireCord is a versatile tinder. It is what Exotac Inc. uses to make its tinderZIP zipper pulls. These, along with a ferro rod, turn virtually any pack with zippered compartments into an emergency fire-starting kit.



◀ For successful fire-starting, especially in bad weather, proper preparation is extremely important. Here, you can see how Alayna has set up her base, has her kindling processed and ready to go, and her fuel within easy reach. Now, she is ready to start her fire.



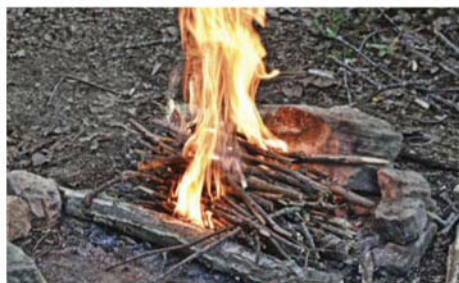
◀ Using a small piece of bark or flat piece of wood to place the tinder on makes it easier for a beginner to ignite. It will prevent movement from the sticks rolling when pushing on the ferro rod.



◀ The mosquitoes and no-see-ums were pretty bad this day. Alayna was about to get a good lesson in just how helpful a fire could be in the warmer months when heat is usually a non-issue.



◀ The moisture is evaporating from the damp wood as the heat rises through it. The steam and smoke wafting through the camp help drive off the mosquitoes and biting flies. Taking advantage of wet wood placed on an established fire can be helpful for running off some of those annoying flying pests.



◀ You can see how the flue-like effect of the air being pulled in from the open ends of the fire lay vectors the heat where it is needed most and intensifies the flames.



◀ Once a sustained fire is achieved, move on to larger-diameter wood. Now, the author's daughter can spend some time resting and maintaining the fire as necessary.



through the open ends of the chimney. This creates a flue-like effect, which intensifies the rising flames, produces more heat and more efficiently dries the damp wood the flames are rising through.

The flames will quickly rise pretty high, and the smallest pieces of kindling will burn out rapidly—even in damp conditions, but especially in drier ones. As the fire lay settles very slightly the first time, the driest wrist-sized pieces are added while the flames are at or still near their peak height and intensity. This step is repeated at each slight settling of the fire lay. When the fire lay consists only of wrist-size pieces aflame, a sustained fire has been achieved.

#### MISSION ACCOMPLISHED

Now that the fire is firmly established, you can move on to larger-diameter limbs. This means more warmth, longer burn time and more time in the warmth between firewood runs if it is cold. This fire lay can even be expanded lengthwise to make a "long fire" at a shelter for sleeping overnight in very cold and wet conditions. **ASG**



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# THE INS AND OUTS OF BUYING AND TRICKING OUT YOUR OWN MILITARY SURPLUS M35

BY JORGE AMSELLE

# 6X6 BUG-OUT BEAST





◀ The U.S. military relied on the M35 "Duce-and-a-Half" in some form or another for almost 50 years.



➤ Surplus M35 trucks can be had for as little as \$7,000, and many are being customized and refurbished. A fully reconditioned and bobbed M35 costs less than the average new car.

see lots of folks driving around in their 4x4 Jeeps and trucks with winches in the front, lift kits, roll cages, extra-large off-road tires, cowcatchers, zombie stickers, etc.

These vehicles are all well and good for the average soccer mom hauling her kids to soccer practice. They also work well for hauling home your GMO-free, organic, locally produced, grass-fed produce from the local farmer's market.

You can stick to your 4x4, or you can step up your game with a 6x6. That's right—you can get a fully tricked-out 2.5-ton M35 military surplus truck for a lot less money than a Jeep or pickup.

Back in 1950, the U.S. military introduced the M35 "Deuce-and-a-Half." It was produced in some form or another until 1999, when it was phased out and replaced. The end result is that a whole lot of perfectly serviceable vehicles flooded the military surplus market. During their time in service, these trucks were the American soldier's school bus, food truck, weapons platform and delivery van, all rolled into one. My own experience with these is that they are big, burly, tough as nails ... and not built for comfort.

### MEET THE BEAST

The weight of these trucks (about 13,000 pounds for a basic one) means that you don't have to have a commercial license to operate one; a regular license will do, and they are street legal. Parking might be problematic, because these trucks are more than 9 feet tall, 8 feet wide and 23 feet long (but you don't have to worry about anyone dinging your doors in the parking lot). Also, fuel efficiency is not the M35's strong suit: It gets an average of 8 mpg in the city and 11 on the highway—about the same as my old



➤ Right: Riding high in the M35 provides a better vantage point than virtually all other off-road vehicles.

➤ Below, left: The soft bed cover protects your gear or passengers and allows quick and easy conversion to an open bed when needed.

➤ Below, right: Garaging is optional, especially if you don't live at an auto shop.







## SPECIFICATIONS

### MILITARY M35 2.5-TON TRUCK

- > **WEIGHT:** 13,000 to 16,000 pounds, depending on options
- > **LENGTH:** 23 feet
- > **WIDTH:** 8 feet
- > **HEIGHT:** 9.3 feet
- > **CREW:** three in the cab; 20 in the back
- > **ENGINE:** LDT 465 six-cylinder turbo (134 hp)
- > **OPERATIONAL RANGE:** 400 to 500 miles
- > **SPEED:** 56 mph
- > **LOAD:** 5,000 pounds
- > **FUEL:** Multi-fuel diesel
- > **TANK CAPACITY:** 50 gallons

Trans-Am. You do get a 50-gallon tank (for an average range of almost 500 miles). The M35 isn't built for speed, either. It tops out at 56 mph (downhill), but you will save a ton of money on speeding tickets.

Instead, the engine is built for power. It is a standard turbo-charged, six-cylinder, 478-cubic-inch engine that produces 134 hp and 330 pounds of torque.

The best part, however—especially for preppers—is the M35's multi-fuel capabilities. Its diesel engine will run on just about anything you put into it. The next gas crisis won't be a problem: You can fill your tank with kerosene, diesel, vegetable oil, used motor oil, heating oil, hemp oil, transmission fluid, hydraulic fluid and high-proof alcohol. The engine will also run on regular unleaded gasoline, but it is recommended that you add 1 quart of motor oil per 15 gallons of gas.

Most M35s come with manual transmission, especially the older models. Of course, nowadays, less than 10 percent of Americans know how to drive a manual. Buyers can get automatic transmission, either standard or as an upgrade. Other options available include heaters, air conditioning and power steering.

### MORE ATTRIBUTES

Regardless of any additional creature comforts, this is still a hard-charging, take-no-prisoners (although there is plenty of room in the back for troop transport) military workhorse. Deep water is no problem, because the M35 was purpose-built for fording (in fact, there is an old newsreel that shows an M35 driving completely



◀ Left:  
Heavy-duty  
suspension is built  
for strength, not  
comfort.



submerged under water. You will need a snorkel kit for this maneuver. Many M35s come with this item already installed, but it can be added to those that don't have it). Another common feature is a 10,000-pound electric winch at the front. These can also be easily added to trucks that don't already have them and allows the operator to get himself or others out of almost any jam.

Maintenance is also very easy, because the M35s were designed by the military to be almost idiot proof and easy to maintain in the field—another advantage when supply lines might be nonexistent. Spare parts are readily and cheaply available through surplus vendors, and many standard commercial truck parts can be used or recovered from salvage yards.

Besides its impressive off-road and underwater capabilities, the M35's other great benefit comes in its cargo capacity of more than 5,000 pounds (or up to 20 fully equipped troops). The front cab has space for a driver and two passengers, but the rear cargo area, which measures 8x12 feet, can be configured in a number of ways, including as a flat bed and as a covered troop carrier. The rear tailgate also drops down for easy loading and unloading.

### BUY A BOBBED M35

Over the years, many old M35s were purchased by local governments and repurposed as fire trucks, snow plows, salt spreaders and tow trucks, as well as police evacuation or emergency supply vehicles.

Private citizens have also taken a keen interest in these vehicles. On the East Coast, you have to worry about hurricanes. Up north, you have blizzards that can leave you stranded and without power for weeks. Down south and out west, you have the threat of tornadoes. On the Pacific Coast, you have tsunamis, earthquakes and volcanoes to contend with. That doesn't even include floods or mudslides.

You can buy an M35 right off the government surplus lot or from a reseller who may have serviced and restored the vehicle. The latter option may give the less mechanically inclined more restful sleep. In addition, the options are nearly limitless for customization.

One company doing custom jobs on these trucks is Big Bug Out Trucks (BBOT) in North Carolina. The most popular alteration is "bobbing" the M35 to make it smaller and more maneuverable. This

➤ *Right:* Big Bug Out Trucks in North Carolina offers fully restored "bobbed" M35s—the most popular alteration. By removing an axle and installing a shorter bed (making the truck a really big 4x4 pickup), it makes the vehicle smaller and more maneuverable.

➤ *Below:* Besides ease of driving and parking, the shorter, bobbed M35 gets better fuel economy, raising it from 8 to 11 mpg to 12 to 13 mpg. This also extends your operational range from 400/550 miles to 600/650 miles and increases the maximum highway speed to 75 mph.



➤ *Right:* Most M35s come with manual transmissions, especially the older models. However, automatic transmissions—either standard or as an upgrade conversion—are easily available, as well as other comforts, such as heaters, air conditioning and power steering.





involves removing an axle and installing a shorter bed, making the truck a really big 4x4 pickup.

Besides ease of driving and parking, the bobbed M35 gets better mileage—raising it from 8 to 11 mpg to 12 to 13 mpg. Pound for pound, this is more efficient than a Toyota Prius. A bobbed version also extends your operational range from 400/550 miles to 600/650 miles and increases the maximum highway speed to a no-longer-getting-honked-at-by-every-other-driver 75 mph.

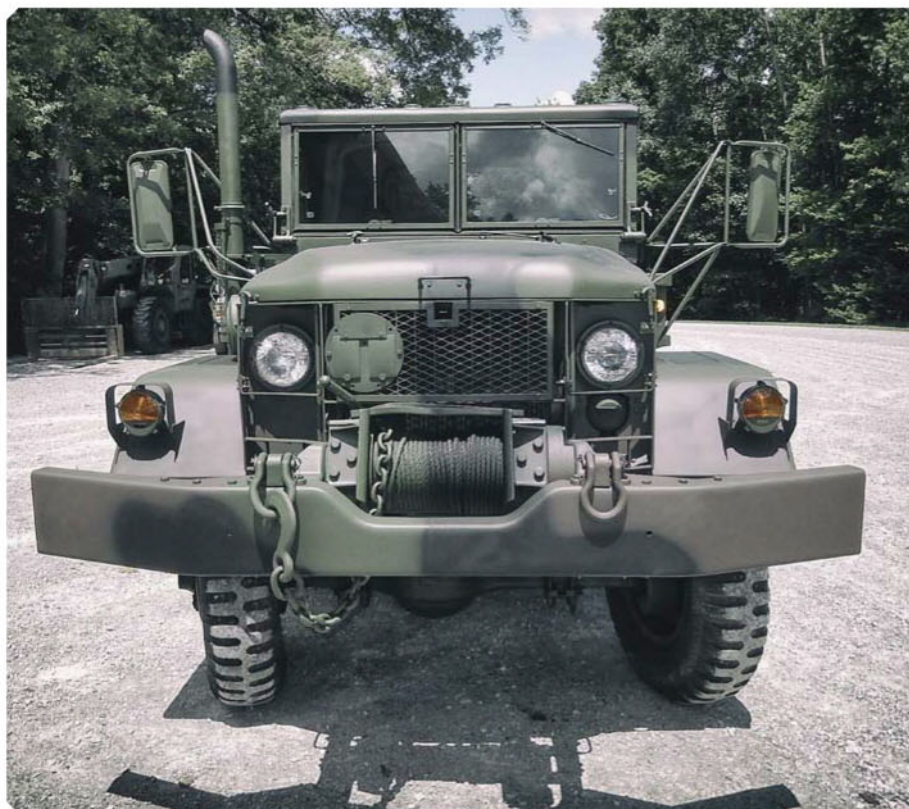
According to the owner of Big Bug Out Trucks, the process is straightforward.

"We remove one of the rear axles, the tandem cradle and about 3 feet from the chassis frame. Then, we re-harden it and add a custom set of springs to match the height of the front so that the rake is adjusted properly. We then lengthen the drive shaft to accommodate the new wheelbase, flip the hubs and adjust the rear axle to accommodate the 46-inch tires. The entire truck is then sandblasted, a shorter M105 bed is installed and then repainted."

If you already have an M35 or a 5-ton truck, Big Bug Out Trucks will customize it for you or will sell you one that is already bobbed. The bobbed trucks do have smaller cargo capacity, however, but if

Below: A full-sized original M35 has 6x6 drive and weighs about 13,000 pounds, depending on the options. This means you don't have to have a commercial license to operate one (a regular license will do), and they are street legal.

**"REGARDLESS OF ANY ADDITIONAL CREATURE COMFORTS, THIS IS STILL A HARD-CHARGING, TAKE-NO-PRISONERS (ALTHOUGH THERE IS PLENTY OF ROOM IN THE BACK FOR TROOP TRANSPORT) MILITARY WORKHORSE."**



Right: Another popular option is the 10,000-pound winch that is EMP proof, because it works off the engine power and not an electrical system. This allows the truck to be used for emergency rescues, pulling stuck vehicles to safety or getting the vehicle, itself, unstuck.

## SOURCES

### Big Bug Out Trucks

(980) 272-8118  
[www.BigBugOutTrucks.com](http://www.BigBugOutTrucks.com)

### Atlantic Firearms, LLC

(410) 352-5183  
[www.AtlanticFirearms.com](http://www.AtlanticFirearms.com)

### Boyce Equipment & Parts Co., Inc.

(800) 748-4269  
[www.BoyceEquipment.com](http://www.BoyceEquipment.com)

### C&C Equipment

(812) 336-2894  
[www.CCSurplus.com](http://www.CCSurplus.com)

### Eastern Surplus & Equipment Co.

(855) 332-0500  
[www.EasternSurplus.net](http://www.EasternSurplus.net)

### Idaho Motor Pool

(208) 452-5335  
[www.IdahoMotorpool.com](http://www.IdahoMotorpool.com)

### Memphis Equipment Company

(901) 774-0600  
[www.MemphisEquipment.com](http://www.MemphisEquipment.com)

### Vintage Military Trucks

(469) 337-4335  
[www.VintageMilitaryTrucks.com](http://www.VintageMilitaryTrucks.com)



you live in a home owners association location that prohibits commercial or oversized vehicles, you can get this one past the rules.

It is possible to go really nuts with the options, which are unlike anything you might have seen on any tricked-out Jeep or pickup. You can get the entire truck wired for crowd-control situations with an electronic shock device to get rid of unwanted hangers-on.

"At the push of a button, 1,000,000 volts of pulsing, low-amperage, nonlethal electricity is sent to plates on the outer shell of the vehicle to stun the unwanted," BBOT's owner told me.

And, if you think you might have to go through really deep water, the M35 can be equipped with a SCUBA system for the driver.

"The advantage of having an onboard breathing system is to allow you enough time underwater to back out of a hole that is too deep. Otherwise, you will lose the truck as you bail out," he explained.

Finally, it might be to your advantage to scout ahead. For this, BBOT offers the Vehicle Launched Aerial Surveillance



◀ Top: The M35 is an incredibly versatile vehicle. During its service time, it was the American soldier's schools bus, food truck, mobile weapons platform and delivery van, all rolled into one. Today, many are still in service as emergency vehicles, snowplows, salt trucks and fire trucks.

(VLAS) system to give you a bird's-eye view of traffic accidents, fires, floods and other disaster areas. You can select from fixed-wing or multi-rotor aircraft that can carry payloads for limited emergency resupply operations or even mounted weapon systems. The UAV can conduct self-guided patrols and send back video surveillance. It is easily operated from a tablet computer.

The M35 might be more than most people need, but if you are looking for real off-the-grid survival options, you cannot do better for the money. Check out the list of M35 vendors to find one near you. **ASG**

➤ Above, left and right: The cab can carry three people, and the cargo area can be configured in a number of ways to carry troops or materiel.

➤ Right: The M35 was purpose-built for fording—there is even an old newsreel online that shows an M35 driving completely submerged under water.





# Ready Your Ride With Major Surplus & Survival

## SOURCE

**Major Surplus & Survival**  
(800) 441-8855  
www.MajorSurplus.com

What good is it to have 5,000 pounds of storage capacity on your vehicle if you have nothing to store? There is no time like the present to stock up and prepare for the coming "Götterdämmerung."

A convenient, one-stop shop for all of your post-Rapture needs is Major Surplus & Survival. This company is up to its eyeballs (literally, I was told) with disaster-preparedness gear—both new and military surplus—to get you from Tierra Del Fuego to Death Valley in one piece. Here are some of my personal recommendations.



### 1 KA500 Voyager Dynamo Radio

This radio comes with a hand crank and solar power. It offers AM/FM, shortwave and weather alert channels, as well as a rechargeable battery that can be kept going with the included hand crank or solar panel. The radio can also be used to charge USB devices, such as your cell phone or GPS, and includes a flashlight. Keep up with emergency alerts, evacuation instructions, weather and news.

**MSRP:** \$49.95

### 2 Military Battalion First Aid Kit

If things really go sideways, the worst thing that can happen to you is getting injured, because there might be no medical care available in the short term. This kit has enough supplies to treat 50 people and, if you have the training, it can be a lifesaver. You get just about every bandage, wipe, cream, glove, dressing and over-the-counter pill known to man. In addition, you can try your hand at self-surgery with the included shears, scalpels and sutures.

**MSRP:** \$199.95

### 3 Mil-Spec Adventure Gear Life Micro Solar Charger

The last thing you want is for your mobile and emergency devices to have a dead battery—with nothing but squirrel power to recharge them. This solar unit lets you plug in anything with a USB cable, including your cell phone and GPS. Depending on how much sun it gets, it can give you up to eight hours of run time on your devices with a day of charging.

**MSRP:** \$69.95

### 4 Official Swiss Army ABC System With Gas Mask, the Bio-Chem Personal Protection Suit and Potassium Iodide Capsules

Since the fall of the Soviet Union, there has been a fire sale on nukes, nuke tech and radioactive components. The North Koreans are at least a couple of years away from hitting the mainland United States with a nuke, but a dirty bomb attack could occur sooner. Protect yourself from radiation, nerve gas, anthrax, viruses, bacteria and disease-carrying mosquitoes with this full-protective gear.

The Swiss Army gas mask is current issue and includes a new NATO standard filter, poncho and gloves. The Bio-Chem protective suit is made from Tyvek and features a hood and booties for head-to-toe coverage. The iodide capsules come 90 to a box and are designed to block your thyroid gland to prevent damage from radiation poisoning caused by iodine-131—a highly radioactive, but thankfully short-lived, product of nuclear fission.

**MSRP:** \$59.95



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**www.minutemanstove.com**  
252-996-0856

\* See The Blazing Hot story in the March 16 issue of ASG magazine





# ***SPRAINS, STRAINS & BROKEN BONES***



# BECAUSE STUFF HAPPENS, NOW'S THE TIME TO TAKE YOUR SURVIVAL MEDIC TRAINING TO THE NEXT LEVEL.

BY JOE ALTON, M.D.

**B**ones, joints, muscles, ligaments and tendons give the body support and locomotion, and there is no substitute for having all your parts in good working order.

The amount of work these structures will be called upon to do after a disaster will be greatly increased. Therefore, you can expect to see many orthopedic injuries—sprains, strains and fractures—in your role as survival medic.

## BEFORE IT HITS THE FAN

We have the benefits of modern technology, which has gone a long way toward fixing the damage we incur to our bones, muscles and ligaments. But having a bum knee will greatly decrease your chances of survival in a major event, so get these problems fixed *before* times get tough. Many of the procedures used to “tune up” faulty joints, for example, are now done with minimally invasive surgery. In many cases, you can go home the same day.

Most people are reluctant to undergo any type of surgery, but consider the effect your orthopedic problem will have on your ability to perform activities of daily survival—not to mention the strain it will put on your family or group.

Preparation for anticipated duties in a post-disaster scenario should also include hand and foot protection items (as well as eyewear). Many of your people will be performing activities they aren't accustomed to, and you'll prevent a lot of injuries simply by enforcing proper protective gear for the situation. A healthy dose of awareness of the terrain and other conditions will also help avoid a trip to the survival medic.

## THE ANATOMY

Everyone knows what bones and muscles are but are less clear about ligaments and tendons. A ligament is the fibrous tissue that connects one bone to another, oftentimes across a joint. A joint is the physical point of connection between two bones, usually allowing a certain range of motion. A tendon is fibrous tissue that extends from the muscle to connect to bone.

When a ligament is damaged, it is called a sprain. When a tendon or muscle is injured, it is called a strain. When a complete tear across a ligament or tendon

occurs, it's referred to as a rupture.

A sprain will manifest as swelling, bruising and pain in a joint; most commonly, the ankle, wrist, finger or knee. The victim will have difficulty using the joint without a great deal of difficulty. A strain will present as pain, swelling, spasms or cramps, and weakness. If ruptured, the amount of pain is magnified, and the muscle or tendon affected might lose function. Most significant strains are seen in large muscles, such as those in the back or legs.

## SPRAIN AND STRAIN FIXES

It's rare to go through life without experiencing these types of injuries to one degree or another. Luckily, treatment is relatively straightforward and uses the easy-to-remember R.I.C.E.S. protocol:

**REST:** Avoid further injury by resting the injured joint. You might not have a choice in survival settings, but ceasing whatever actions led to the injury will give you the best chance for a full recovery. Continued use will

cause the weakened ligament or tendon to re-injure itself again and again.

**ICE:** Cold therapy decreases both swelling and pain. The earlier it is applied, the more effect it will have in speeding up the healing process. If you're in the wilderness, you might have to stick your ankle in a stream to get some cooling action, but you should always keep some “shake-and-break” cold packs in your medical kit. Cold therapy should be performed several times a day for 20 to 30 minutes or so each time for the first 24 to 48 hours. This is followed each time by applying compression.

**COMPRESSION:** A compression bandage is useful to decrease swelling and should be placed on the injury after each cold therapy. This will also help provide support to the joint.

After applying some padding to the area, wrap it with an elastic ACE bandage, starting below the joint and working your way up beyond it. The wrap should be tight but not uncomfortably so. Any tingling, increased

**“... CONSIDER THE EFFECT YOUR ORTHOPEDIC PROBLEM WILL HAVE ON YOUR ABILITY TO PERFORM ACTIVITIES OF DAILY SURVIVAL—NOT TO MENTION THE STRAIN IT WILL PUT ON YOUR FAMILY OR GROUP.”**



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# FRACTURE LINGO

**NON-DISPLACED (STABLE):** In the simplest fracture, the broken ends of the bone are barely out of place.

**DISPLACED:** The broken ends of the bone are no longer in line. This is often clearly visible as a deformation of the normal appearance of, for example, an arm or leg.

**OPEN OR COMPOUND:** In a compound fracture, the broken bone or other penetrating trauma pierces the skin. The end of the bone might be exposed or might have retreated below the level of the skin.

**COMMUNUTED:** The bone shatters into several pieces, with or without penetrating the skin.

**OBLIQUE/TRANSVERSE:** The line of the broken bone might be horizontal or at an oblique angle.

**GREENSTICK:** Sometimes called an “incomplete” fracture. One side of the bone snaps, the other remains intact—reminiscent of the result of trying to snap live wood in two.

**HAIRLINE:** A fracture whose line of break is so thin, the two broken ends do not separate. The break might not go through the entire bone. It is usually confirmed by X-ray.



pain or numbness tells you that the wrap is too tight and should be loosened.

A change of color beyond the joint injured is another sign. In an ankle sprain, for example, you might notice the toes turning white or even blue.

**ELEVATION:** A sprain should be elevated above the level of the heart. This will help prevent swelling (also called “edema”) at the site of the injury. Edema is caused by fluid that pools where the inflammation is and gravity allows. By elevating the leg, the fluid drains back into your circulation and aids the healing process—or at least doesn’t impede it.

**STABILIZATION:** Immobilizing the injury will prevent further damage in severe sprains. Immobilizing can sometimes be accomplished by using a compression bandage alone. Other times, a splint or cast might be necessary. This strategy will help support a patient who is unable to place much weight on the joint. Splints are commercially produced, such as the versatile SAM (structural aluminum malleable) splint, or can be improvised with sticks and strips of cloth or pillows and duct tape.

In addition, pain relievers that also have an anti-inflammatory effect, such as ibuprofen and aspirin, will have a beneficial effect. Ibuprofen serves as an excellent anti-inflammatory and pain reliever. Natural remedies might also help. The underbark of willow and poplar trees contains salicin, a natural pain medicine that was the original basis for aspirin (salicylic acid).

## TREATING FRACTURES

A traumatic injury to soft tissues can occur with such force as to damage the skeletal structure underneath. When a bone is broken, it is termed a “fracture” and most often involves the extremities. The types of fractures are explained in the accompanying sidebar at the left on this page.

Of course, the use of an EMT shears or bandage scissors to cut away clothing will give you a better idea of the extent of the injury. After controlling any bleeding, all medical treatment of fractures involves this fundamental rule: The broken pieces must be put back into position and prevented from moving out of place until they are healed. Broken bones heal by “knitting”

together. Over time, new bone cells will form around the edges.

In many cases, the medic must restore the bone back to its original position. This procedure is called “reduction” and is very painful. It is, in normal times, often performed under general anesthesia. The longer this procedure is delayed, the more swelling occurs, and the more difficult it becomes. However, without reducing the deformity, the victim could lose part or all of the function of the injured extremity.

Even after reduction, the broken ends might not stay in place without special efforts. Traction might be required to maintain the normal position. In modern orthopedics, metal pins and screws are sometimes inserted into the bone to stabilize the broken ends.

In an austere setting, where modern medical help is not available, reduction can still be performed. For example, let’s consider a forearm fracture: Holding the upper arm stable, use downward pressure to pull the lower arm until straight. Expect a lot of discomfort during the procedure.

It should be noted that attempting a reduction could damage nerves or blood vessels

➤ *Right:* Activities of daily survival might cause injuries such as back strains.



➤ *Near right:* Injuries to ankles are the most common type of sprain.



➤ *Far right:* Those unaccustomed to major physical exertion will be most prone to strains and sprains.





and should be attempted only in situations in which access to modern facilities is non-existent for the long term. Check for pulse and sensation beyond the level of the injury after the reduction.

Once the broken ends of the bone are together again, ice packs, elevation and stabilization are important to reduce swelling and prevent re-injury. The extremity must be immobilized with a SAM or improvised splint for severe sprains. Make sure the extremity is splinted in a normal position. For example, an arm should be splinted at a 90-degree angle at the elbow; the leg with a slight bend at the knee; and the fingers as if the victim were holding a glass of water. Additional supplies would include slings and crutches for the recuperating patient.

## PLACING A CAST

You might consider including casting material in your medical supplies. Casting material using plaster of Paris or fiberglass is easy to obtain and lasts a long time. Plaster is more pliable and hardens slower, giving you more time to apply the cast. Fiberglass, however, is lighter and less messy to use.

Each fracture is casted somewhat differently and with various materials, but the basic principles are the same: When placing a cast, you first start with a liner of cotton known as a "stockinette." The stockinette should be measured and cut several inches longer than the intended cast. Place it, without wrinkling, over the area to be casted as you would put on a sock.

Then, you will need rolls of padding to form a barrier between the skin and the cast. Advance one half of the thickness of the roll each turn as you go from below the fracture toward the torso. The padding should be at least two to three layers thick and should extend an inch or so beyond the cast edge. Extra padding should be applied between digits and over bony prominences, such as the wrist or ankle.

At this point, rolls of plaster of Paris or fiberglass are immersed in cool water for 20 seconds or so and then squeezed to remove excess water. Keep the end of the roll between your fingers or it will stick to the rest and be difficult to find. Begin to slowly wrap the casting material around the area of the fracture, smoothing it out as you go along. Advance one half of the thickness of the roll each turn as you go from below the fracture toward the torso. Avoid making it too tight. You will want perhaps three layers of casting material on the area and more in places where there is a bony



◀ Above, left: Fracture of the femur (thigh bone)

◀ Above, right: The "buddy method" for broken toes pairs the injured toe with the one next to it for support.



prominence, such as the wrist.

Roll the ends of the stockinette and padding back over the cast before the last layer is applied to form padding for the edges. Stockinettes, padding and casting rolls are available in different widths and lengths appropriate to the particular fracture.

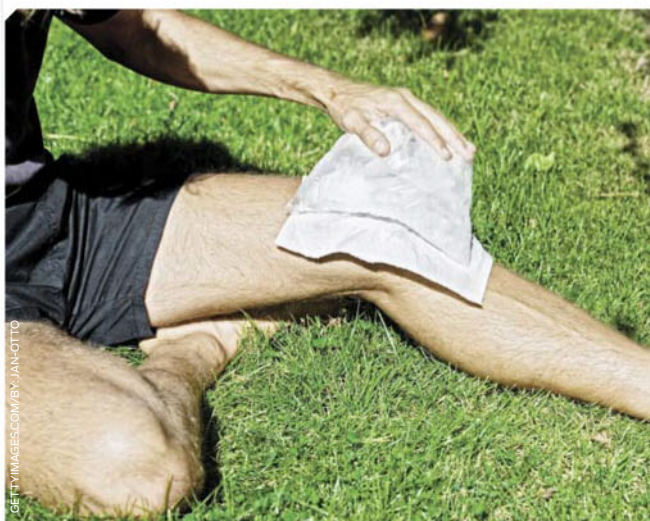
## SPRAINS VS. FRACTURES

How do you tell the difference between a sprain and a fracture? Sometimes, it's quite easy, as when a straight bone is suddenly "zigzag" in shape. Many times, however, it's hard to determine without modern diagnostic tests (which won't be available in a long-term survival situation).

### LOOK FOR ONE OR MORE OF THESE SIGNS:

- ◀ A fracture will generally have more-pro-nounced swelling and bruising.
- ◀ A fracture is generally so painful that no pressure is placed on the injury at all. You still might be able to use the joint or muscle in a sprain or strain, even though it might be painful.
- ◀ A fracture might have a deep cut in the area of the injury. This is called an "open" fracture

➤ Cold packs will help relieve swelling and pain.



and is particularly dangerous due to the risk of infection. The bone is not always outside the skin, because it could have gone back inside after the original trauma.

◀ A fracture could produce a grating sensation when pressing down near the injury from the two ends of the bone rubbing against each other.

◀ A tuning fork (128 Hz) placed on the bone just beyond the fracture might not elicit sound or could show diminished sound when the survival medic listens with a stethoscope above the injury (that is, closer to the torso), compared to intact bone on the opposite extremity.

## LAST CALL

In survival settings, it will be hard to match the results that an orthopedic surgeon and a modern hospital can give. The survival medic can, however, use supplies and training to give a group member a decent chance of recovering from certain orthopedic injuries.

There's a lot more to it than just what is in this article, so get more knowledge and training before things break for the worse and go completely sideways. **ASG**

**"... YOU CAN EXPECT TO SEE MANY ORTHOPEDIC INJURIES—SPRAINS, STRAINS AND FRACTURES—IN YOUR ROLE AS SURVIVAL MEDIC."**



# MAKE WILD SOUP CUBES

A close-up photograph of a wooden mortar and pestle. The mortar is filled with a fine, bright green powder. A small pile of the same powder sits on the dark, textured wooden surface next to the mortar. In the bottom right corner, a small white bowl also contains some of the green powder. The background is a dark, weathered wooden surface.

**UNLEASH THE  
TASTINESS  
OF WILD NETTLES  
LONG AFTER  
YOU'VE DONE  
YOUR FORAGING  
BY LEARNING TO  
DEHYDRATE.**

STORY AND PHOTOS BY PASCAL BAUDAR







In the case of a grid-down scenario, without electricity, working gas distribution and so on, freezing or canning might not be an option for many folks. They might have to resort to traditional food preservation techniques such as smoking, fermenting or dehydrating.

Dehydration is probably one of the easiest ways to preserve many types of food—from herbs, vegetables, berries and fruits to meat (and even insects). Most of the food items you would dehydrate appear in spring or summer, when the higher temperatures and sun can do the work for you.

The underlying principle behind dehydration is very simple: Most of our food contains a large amount of water (up to 95 percent for some fruits and vegetables and 50 to 75 percent for insects and meats). Like any living organism, the bacteria in our food need water to survive. If you remove the water, the bacteria that could spoil your food will be destroyed, thus ensuring safe preservation.

If you walk around your local supermarket, you will find a plenitude of dehydrated foods, including instant mashed potato powder, spices, pasta, tea, beans and breakfast cereals, to name just a few.

## LOSE THE WATER

Dehydration is very often used with other methods of preservation (such as salting and sugaring) for added food safety, extended storage time and enhanced flavor. Such is the case with potato chips, soup cubes and



◀ Author Pascal Baudar teaches how to make dehydrated soup cubes.

◀ Below, left and right: Students prepare edible wild greens to dehydrate. After dehydrating, the plants will be reduced to powder and used to make soup cubes.

***“IF YOU REMOVE THE WATER, THE BACTERIA THAT COULD SPOIL YOUR FOOD WILL BE DESTROYED, THUS ENSURING A SAFE PRESERVATION.”***

beef jerky, which use salt, while other foodstuffs, such as condensed milk, some power bars and cookies, mostly use sugar.

Dehydration is also much more than just a method of preserving food: By using your imagination, you can create countless interesting snacks, delicious infusions and spice blends. It can be used to condense flavors, alter textures and even add colors.

The real fun in experimenting with dehydration and regular or wild foods is the potential for interesting and original creations—not just for survival.

But from a survival perspective, and in the case of a grid-down scenario, creating your own soup cubes is a potentially delicious and rewarding project any survivalist should experiment with.





## NETTLES SOUP CUBE

A few years ago, I started researching the idea of making dehydrated wild (or regular) food soup cubes instead of buying soup cubes from the store. It's a great way to preserve food and doesn't take much room in your backpack or in your pantry. These soup cubes also contain far fewer chemicals than store-bought versions. Being able to drink some tasty, organic soup after a long day exploring the outdoors induces a wonderful, comforting feeling.

I use a wide variety of wild edibles when making my soups, but the procedure for making dehydrated soup cubes is pretty much the same for regular ingredients that can be found in your garden. You can take a look at a recipe for a vegetable, onion or leek soup, for example, dehydrate all the ingredients that are part of the recipe, and use the following procedure to make dehydrated soup cubes.

Because I love to forage, I tend to make soups with wild plants, but it works with any regular legumes and spices. You can also add dried, lean meat (fat can go rancid over time and as a result of high temperatures), mushrooms and so on.

Here's how to make wild food soup cubes using stinging nettles.

### DRY IT OUT

The first step for making the soup cubes is to dehydrate the fresh ingredients. In essence, you don't change the original recipe but simply dehydrate the ingredients instead of using them fresh.

In a grid-down scenario, I would hang the herbs or place the onions, garlic, etc. in the sun to dehydrate. I suggest doing a bit of research on the proper way to dry plants, legumes, beans and other food to keep their flavors and nutrition in tact. For example, because of Southern California's hot climate, I hang my nettles outside in the shade. Dehydrating them in the sun would be too much. However, direct sun works well for onions or garlic.

Wash the nettles (I used young nettles in my recipe, so I didn't remove the stems, which are still tender), slice the onions and potatoes, chop the garlic, and dehydrate outside. Very often, I place my sliced onions, potatoes and garlic in a frame with a mesh in the center. It's quite easy to make a frame with regular mosquito mesh.

If you want to make soup cubes in advance (that is, before an actual grid-down scenario), you can use a dehydrator. When I use one, three or four hours for fresh

**1** The ingredients to make nettle soup before dehydration. The idea is to choose a soup recipe, gather your ingredients and dehydrate them first.

**2** Use a dehydrator to dry the soup ingredients. Alternatively, use a kitchen oven or dry the ingredients in the sun.

**3** All the ingredients needed for the soup recipe have been dehydrated.

**4** The dehydrated ingredients are reduced to powder using a coffee grinder. In a grid-down situation, you could use a hand-cranked coffee grinder or a *molcajete* (stone grinder).

**5** Water is added to the ingredients to form a thick paste.

**6** Using your fingers, create little cubes from the vegetable dough.

**7** Dehydrate the soup cubes. Make sure they are completely dry before storing them in a closed container or jar.

**8** To prepare soup, place your cube(s) in water, bring the water to a boil, and simmer for about 10 or 15 minutes. (The author used a hot rock to bring his soup to a simmer.)





# Stinging Nettle Soup

## Ingredients

Typical ingredients include nettles, onions, garlic, potatoes, French or Italian spice blends, salt and pepper. Some people also add bacon, but we're making a vegetarian soup here. 2 to 3 compacted cups (475 to 700 ml volume) of nettles (leaves or whole, young nettles)  
2 medium-sized onions  
2 potatoes  
6 cloves of garlic  
You can add spices to taste. It's really not a set recipe; more nettles will make it even tastier.

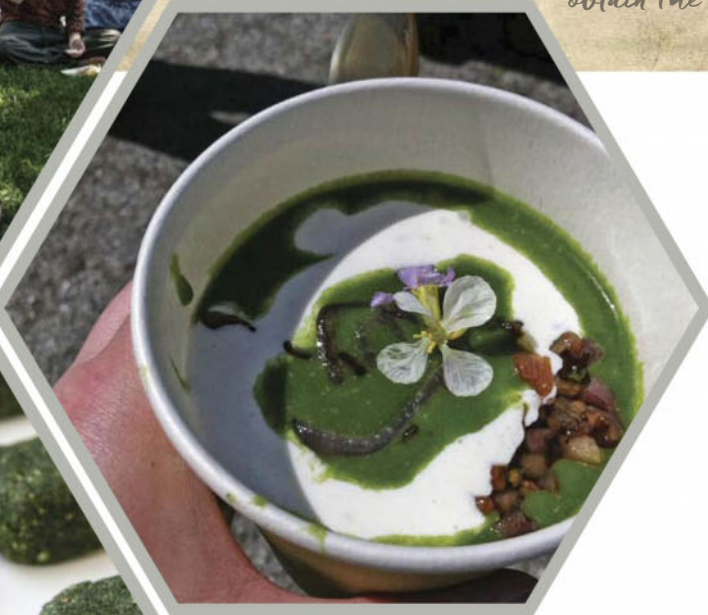
## The Remix

### Ingredients

Place all the powdered ingredients on a plate and add water. My basic recipe calls for:

1/3 cup (around 80 ml volume) nettle powder  
2 teaspoons (6 g) onion powder  
2 teaspoons (6 g) potato powder  
1 teaspoon (3 g) garlic powder  
1 teaspoon (3 g) French or Italian herb mix  
1/3 teaspoon (2 g) each of salt and pepper

Make sure you don't add too much water; you want to achieve the same consistency as bread dough. Too much water, and you won't be able to shape your vegetable dough into cubes. I use a fork to mix the ingredients and obtain the perfect consistency.



nettles at 120 degrees (F)/49 degrees (C) does the job. If you hang them outside, it can take a day or two in a climate similar to that of Southern California.

For the other ingredients (onions, garlic, potatoes), I crank up the temperature a bit to around 140 degrees (F)/60 degrees (C).

You can also use your regular oven, but the temperature you will need to set it at will probably be higher than using a dehydrator, even on the lowest setting. If you do use your oven, place your ingredients in a single layer on a baking sheet and leave the oven door open about 1 or 2 inches to improve air circulation. Some modern ovens have a "dehydrate" setting; if so, follow the directions provided by the manufacturer.



**“... SOUP CUBES ALSO CONTAIN FAR FEWER CHEMICALS THAN THE STORE-BOUGHT VERSIONS.”**

#### POWDER TIME

Once your ingredients are dried, you need to reduce them to powdered form. I usually use my *molcajete* (stone grinder) to do this. It takes time, but it provides a good arm workout—and it works very well, too. When I’m pressed for time, I use my trusty hand-cranked coffee grinder.

Before grinding, you should crush the potatoes and garlic into small bits (using a stone, hammer or whatever does the job), because dehydrated garlic and potatoes can be very hard.

A note to those who are in a hurry: Aside from the nettles, you can purchase all the dry ingredients instead of making them. Garlic, onions and potatoes can be found at your local grocery store, but the flavors won’t compare to the ones you dehydrate yourself at home.

#### SHAPE UP

Wash your hands and then shape the vegetable dough into a big ball. Let it rest a bit (I usually allow it to rest for 30 minutes). Doing this leaves time for the various flavors to interact and blend with each other. This resting step is optional.

If you let the dough rest for 30 minutes, wash your hands again and, using your fingers, create little cubes with the dough.

#### LET 'EM DRY

The final step is dehydrating the cubes. This takes a while in a conventional dehydrator (around 10 hours of drying time at 125 degrees (F)/52 degrees (C), so it’s not an energy-saving procedure by any means. However, if you’re using your dehydrator to also warm up your house during the winter, it’s a good option.

Obviously, in a grid-down scenario, you would dry the cubes directly in the sun. Make sure the cubes are really dry before storing them in a closed container or jar.

#### SOUP’S ON!

To make soup, place the cube(s) in water, bring the water to a boil, and let simmer for 10 to 15 minutes.



◀ Soups can be enjoyed during outdoor activities or for survival purposes. Properly done, they’re delicious and nutritious food sources.

Let’s be honest, though: While soup cubes are fun to make, in a grid-down scenario, you can skip making the actual cubes and use the powdered soup mix to make your soup. It’s easy to store in bags or jars, and you’ll save some money from not using the dehydrator or oven for dehydrating the cubes.

Have fun with this process! There are many delicious soup creations you can make with dehydrated ingredients. Experiment a bit before an actual grid-down scenario, and store your favorite recipes. In addition, keep in mind that from a survival perspective, soup cubes could also be an interesting barter item. **ASG**

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# 21ST-CENTURY TAKEDOWN

## BUG-OUT OR BUG-IN FIREPOWER THAT'S POTENT AND DOWNRIGHT PACKABLE

STORY BY WILL DABBS, M.D. | PHOTOS BY SARAH DABBS

**O**ver my lifetime, I have acquired some mighty fine firepower for my personal collection. There's a heavy-barrel precision rifle that will punch tangent holes out as far as I can see. There's an Information Age fullest-capacity shotgun that packs half a box of shells onboard and looks as if it fell off the set of the latest *Star Wars* movie. There's even a British surplus World War II-era anti-tank weapon.

The common thread for all this fine iron is that it weighs as much as a boat anchor. It would require a case the size of a coffin to transport.

When you are bugging out or even just travelling any significant distance on foot, something lighter and handier is required.

There are many variations on the fine art of "flaying the feline": Bullpup guns place the action behind the trigger to minimize length. Short barrels look sexy, but they all incur a velocity penalty. Should the tube drop to fewer than 16 inches, you open a whole new can of federal worms, as well.

One of the neatest ways to make a proper utility gun small enough for easy packing is to design it so it breaks in half.

Lots of folks have tried it. There were some respectable takedown guns in service as early as the 19th century. Now, well into the 21st century, modern technology offers us some spanking examples of takedown guns that are as reliable and accurate as their fixed counterparts.

One of the coolest models builds upon Eugene Stoner's timeless AR-15.

### LET SLIP THE DOGS OF WAR

Cry Havoc Tactical takes its inspiration from Act 3, Scene 1 of William Shakespeare's *Julius Caesar*. This manufacturer's QRB ("quick-release barrel") kit transforms almost any standard AR rifle into a compact, packable takedown rifle with nothing more onerous required than flipping a pair of levers. The Cry Havoc QRB system works on just about any direct-gas AR rifle, and it is slick, indeed.

The heart of the system is a proprietary collar that replaces the barrel nut on a standard direct-impingement AR platform. The instructions that come with the system are easy enough to follow; I assembled mine with the able assistance of my daughter on a lazy afternoon.

You'll need a low-profile gas block and

a compatible forearm rail, but that's all clearly spelled out in the documentation. Anything that must be really rigid is secured with the provided thread-locking compound. Engineering and execution are both flawless.

The end product is as swarthy and accurate as an otherwise-unmolested AR rifle. In practice, you simply throw a pair of









levers and slide the barrel assembly off to the front. A 14.5-inch barrel with a pinned flash suppressor to meet the 16-inch minimum breaks into a package roughly the same length as the remaining receiver assembly equipped with a standard sliding stock. The resulting takedown package will easily fit into a small day-pack or slip behind the seat in a pickup truck. Reassembly takes less time to do than to describe.

#### **PRACTICAL TACTICAL**

From a standing stop, you retrieve the two halves of your rifle and slide the front

***“... AN AR BUILT AROUND A CRY HAVOC QRB KIT PUTS STATE-OF-THE-ART DEFENSIVE HARDWARE INTO A PACKAGE THAT IS APPROPRIATE FOR A MOTORCYCLE COP OR A DISPLACED CITIZEN ON THE MOVE IN AN EMERGENCY.”***



◀ *Far left, top:* Dual levers and a proprietary collar ensure swift and secure assembly.

◀ *Near left, middle:* The top-tier Mk47 Mutant comes with Geissele's SSA trigger that offers a phenomenally crisp and light pull at just 4.25 pounds.

◀ *Far left, bottom:* Quick and precise attachment of the barrel is made simple with two robust levers.





***"IT'S A RIFLE  
BUILT ON AN AR  
PLATFORM BUT  
FIRES 7.62 X 39MM  
AMMUNITION AND  
ACCEPTS STANDARD  
AK-47 MAGAZINES.  
IT'S PRETTY MUCH  
THE BEST OF BOTH  
WORLDS."***

◀ The CMMG Mk47 Mutant is an AR-platform rifle that accepts AK-style magazines and fires the 7.62x39mm round.

reliability was as spot-on as an otherwise standard AR. The takedown feature necessitates a repeatable interface between the front-end gas tube and the proprietary receptacle in the upper receiver, but this little engineering wrinkle did not detract one whit from the gun's innate functionality or reliability. Overall, the Cry Havoc QRB system offers a lot of cool with no discernible down side. (MSRP: \$349)

#### **SHORT IS THE NEW BIG**

Cry Havoc Tactical offers assembly service for your existing barrel and upper receiver, but my daughter and I knocked out a build by ourselves without appreciable difficulty. Stick with the recommended forearms, and you won't have to molest a thing. One of my Cry Havoc guns involved a 7.5-inch pistol barrel, and the resulting registered short-barreled rifle will drop into the center console of a car.

Short is the new sexy, and when it comes to packable takedown rifles, an AR built around a Cry Havoc QRB kit puts state-of-the-art defensive hardware into a package that is appropriate for a motorcycle cop or a displaced citizen on the move in an emergency. The resulting rifle does everything its longer brethren might while taking up literally half the space. Minimize the legal barrel length, and you get something shorter than an NFA-registered short-barreled rifle. Match the QRB with a registered SBR or pistol chassis, and the end result is just crazy tiny.

#### **GRAND SCHEME**

The kit is reasonably priced and impeccably executed. Additionally, the build process is genuinely fun, requiring only the most basic tools and a trivial amount of mechanical aptitude to pull off the conversion. The end product is a genuinely effective bugout or general-purpose survival gun.

My own personal gun collection obviously just got bigger ... but not by very much. **ASG**

end into the back. An alignment pin keeps everything properly oriented, and tolerances are tight enough to preserve accuracy. Throw the pair of locking levers forward, and they snap past dead center to secure the whole rig reliably. Compound leverage ensures a nice, tight lockup. The physics of the thing are fascinating to a diehard gun nerd like me.

Once the gun is assembled, it runs just like every other AR rifle you have ever hefted. The levers ride flush so they don't catch on stuff, and the intrinsically modular nature of the AR platform means all your existing electronic "bling" runs true. The rifle moves within a vehicle and around the house like the apex predator it is.

The rifle grouped at 100 meters as well as any of the other 16-inch guns in my stable, and





# THE TAKEDOWN RIFLE SPECTRUM



## CHIAPPA M6

### OVERVIEW

The Chiappa M6 rifle is a modern-day rendition of the original U.S. Air Force's M6 survival rifle. The Chiappa M6 is an over-and-under weapon that sports a shotgun tube in either 12- or 20-gauge above a rifled barrel launching either .22LR or .22WMR rounds. Twin triggers control each barrel separately, and the gun is as reliable as a tire iron.

The M6 folds for storage and has enough rail space for lights, lasers or optics. When combined with the X-Caliber chamber insert system, the M6 will shoot literally any common centerfire handgun cartridge you might encounter, as well as .410 shotshells. Whether the application is camping, hiking, hunting or general security, the M6 is a versatile and effective solution. Simple, robust and clever, the M6 can keep you safe, fed and unmolested almost anywhere.

### MSRP

\$760

### URL

[www.ChiappaFirearms.com](http://www.ChiappaFirearms.com)

## RUGER 10/22 TAKEDOWN LITE

### OVERVIEW

For over half a century, the Ruger 10/22 has been America's favorite .22 rifle. Combining a unique, rotary-feed, 10-round magazine with classic sporting styling, the 10/22 has started many a gun nerd along the path to gun collecting and the shooting sports. The 10/22 is reliable, fast handling and versatile, with literally countless aftermarket magazines, stocks and accessories just waiting to amp up the horsepower.

The newest addition to the Ruger 10/22 stable is the 10/22 Takedown Lite. Combining all that is good and wholesome about the classic 10/22 with a new, lighter-weight barrel and Ruger Modular Stock System. The factory-threaded barrel accepts all the standard flash and sound suppressors.

The standard Ruger 10/22 is a timelessly popular great gun. The new Takedown Lite is even better.

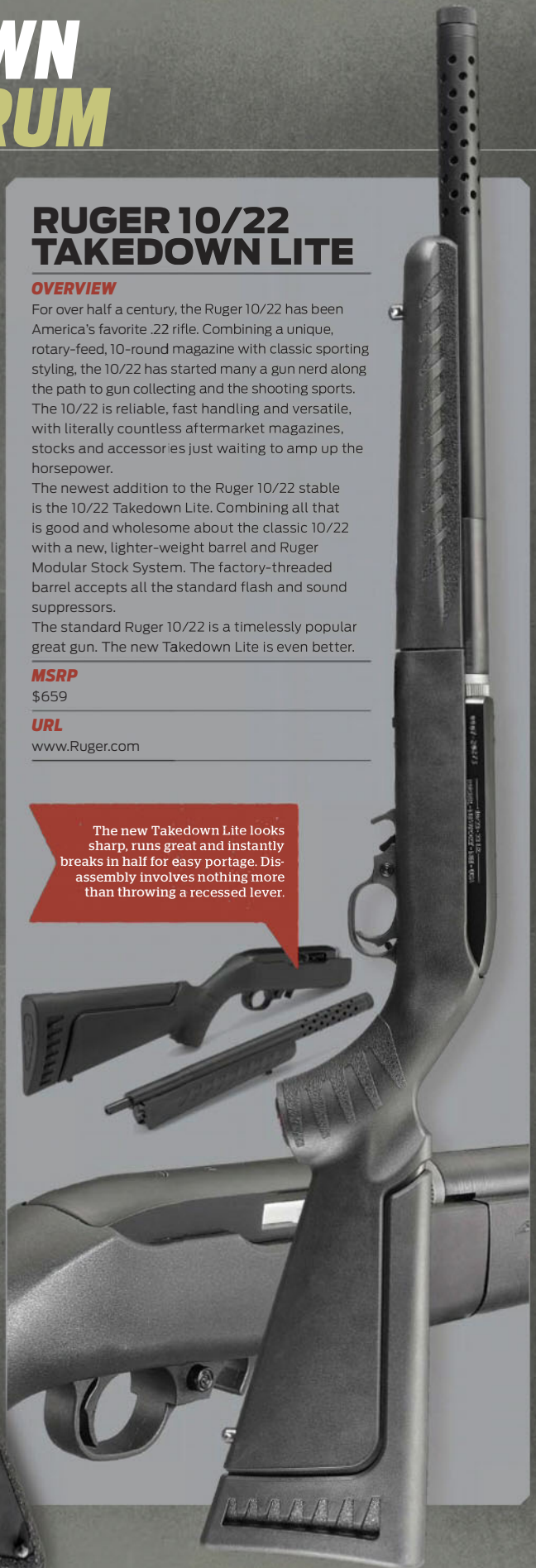
### MSRP

\$659

### URL

[www.Ruger.com](http://www.Ruger.com)

The new Takedown Lite looks sharp, runs great and instantly breaks in half for easy portage. Disassembly involves nothing more than throwing a recessed lever.







## HENRY U.S. SURVIVAL RIFLE

### OVERVIEW

Back in the days before the AR15, Eugene Stoner designed the .22-caliber AR7 survival rifle as a collapsible survival arm with which to equip American military aircrews. The AR7 was remarkably advanced for its time, making use of Space Age polymers in the stock and aluminum casting technology for the receiver. The receiver assembly, barrel and magazine all broke down and fit into the buttstock for storage. The gun would even float.

The modern-day iteration of the AR7 is the Henry U.S. Survival Rifle. Made from indestructible Information Age synthetic materials and aluminum alloys, the Henry U.S. Survival Rifle does everything the original did—but at a remarkably low price.

This rifle breaks down to about nothing and weighs only 3.5 pounds. If your circumstances demand a compact, small-caliber semiautomatic rifle suitable for general utility applications, the Henry U.S. Survival Rifle is purpose-designed for this mission.

### MSRP

\$250

### URL

[www.HenryRifles.com](http://www.HenryRifles.com)

## KEL-TEC SUB-2000 CONVERTIBLE RIFLE

### OVERVIEW

The Kel-Tec SUB-2000 convertible bullpup rifle instantly folds up into something that will easily stash in a daypack. The resulting maximum dimension is 16 inches, as defined by the minimum length of the barrel. The SUB-2000 bolt reciprocates into the stock strut, and the charging handle cycles along with the bolt for easy access. Hit a switch to deploy the gun. Tug the trigger guard to break it down. The process takes no time at all.

The gun is available in both 9mm and .40 S&W and can be had configured to accept Glock, SIG, Beretta or S&W pistol magazines. By properly choosing the platform, both your service handgun and the SUB-2000 rifle feed the same rounds from the same magazines.

Kel-Tec is a known innovator, and its combination of a bullpup action and a takedown design makes for a gun as compact and effective as it is awesome.

### MSRP

\$409

### URL

[www.KeltecWeapons.com](http://www.KeltecWeapons.com)





# THE TAKEDOWN **BAG SPECTRUM**



## COMP-TAC TROJAN HORSE

### OVERVIEW

The Comp-Tac Trojan Horse long gun case is a zip-up case rated for up to 35 pounds' worth of guns and gear—yet, it looks absolutely nothing like a gun case.

The case is 36 inches long and 15 inches wide at its widest dimension. Rigid side panels prevent any telltale printing, and the adjustable, padded shoulder strap has a quick-release buckle on either end. There are also two smaller carrying handles.

The interior of the case sports a divider with MOLLE straps for pouches and support gear, and there are also two inside zipper pockets. The heavy-duty zipper has a tactical speed pull attachment for quick deployment.

The case will comfortably hold most modern tactical firearms with ease. The Trojan Horse allows you to pack a serious gun in public spaces without causing any undue angst among the less-durable members of the population.

### MSRP

\$75

### URL

[www.Comp-Tac.com](http://www.Comp-Tac.com)

## COPPER BASIN 10/22 TAKEDOWN BACKPACK

### OVERVIEW

Copper Basin has capitalized on the popularity and versatility of the Ruger 10/22 Takedown Rifle with its Copper Basin Ruger 10/22 Takedown Backpack. Designed specifically to transport the 10/22 Takedown or Charger pistol both securely and discretely, the Takedown Backpack weighs 2.6 pounds and is available in nonmilitary, non-LE color schemes that allow the user to move confidently through urban and outdoor surroundings without arousing concern. With the Takedown Backpack, you can be armed safely and anonymously.

When needed, the pack folds open completely for total unfettered access. Adjustable padded straps with carabiner loops, a breathable mesh back and a lumbar support pad make for extended comfortable carry. An adjustable sternum strap incorporates a whistle buckle, along with a vehicle headrest strap. Shoulder straps tuck into the back and stay out of the way when not in use.

### MSRP

\$99

### URL

[www.CopperBasinGear.com](http://www.CopperBasinGear.com)

The rifle's distinctive contours are effectively obscured. Hook-and-loop closures with cinch straps combine with a fleece-lined interior to protect your rifle.



## RUGER 10/22 TAKEDOWN BAG

### OVERVIEW

The Ruger 10/22 Takedown Bag is a padded, nylon backpack-style carrying case specifically engineered around the Ruger 10/22 Takedown Rifle. Sporting two large exterior, zippered pockets for accessories and ammunition, as well as handles, D-rings and carry straps aplenty, the Takedown Bag is the perfect complement to the capable, new 10/22 Takedown Lite Rifle. The bag is MOLLE equipped and measures only 22.5x7 inches at its largest dimensions.

### MSRP

\$79

### URL

[www.Ruger.com](http://www.Ruger.com)







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# GEAR **GUIDE**

## URBAN JUNGLE GEAR

### A COLLECTION OF USEFUL GOODS FOR WHEN IT HITS THE FAN IN THE BIG CITY

BY LAMAR UNDERWOOD

**S**urvival is not only about jungle or deep-woods life-or-death situations; it is also about surviving natural or manmade disasters in your own backyard.

Urban emergencies can occur when you least expect them—while at work, in school or while driving down the street. Expect the unexpected, and be prepared with survival gear targeted for urban or city street survival.

From non-attention-grabbing backpacks to hidden-compartment caps to pocket knives and multi-tools, urban survival is all about blending into the crowd and not attracting unwanted attention. Remember, everyone else will be experiencing the same scenario as you are; pandemonium will be erupting, riots will be violent and out of

control, and previously peaceful people will do whatever is possible to help themselves and their families.

With dense populations and limited supplies for all, you will become a target if you appear to have what others do not. Don't be a victim of another's greed or necessity. Prepare ahead, and forget the thought, *It couldn't happen to me.*

The time to plan is now. Pack and store your gear at key locations, and formulate an escape route if and when a disaster strikes. With the proper pre-preparedness and the tools to back you up, you can make it out of the urban chaos. Once you do, your backwoods skills will then come into play.

Here are eight items that will help you bug out of the urban madness. **ASG**









# GEAR GUIDE



## 1 OKC Cerberus

This no-frills knife is a great addition to your grab-and-go urban pack. Sporting a full-tang, 4.8-inch blade and an ergonomic, nonslip-grip handle, the Cerberus can be used as a tool when a sharp cutting blade is needed and as a weapon when you are faced with aggressive opposition. This knife can be attached easily to your belt for quick access at the first sign of trouble. Its nonreflective black color will not attract attention to your position. An urban crisis needs an urban-style weapon. The Cerberus fits the bill nicely.

### Specifications

- Full-tang blade
- Black-oxide coating
- Included Kydex sheath
- Ergonomic G10 handle
- Razor-sharp edge

### MSRP

\$265

### URL

[www.OntarioKnife.com](http://www.OntarioKnife.com)

## 2 Trauma Pak Pro With Quikclot

Natural or man-made crises can cause havoc in a crowded urban environment. Bleeding from falling debris, car accidents or even gunshot wounds needs fast action. The Trauma Pak can deliver.

This medical aid is your first line of defense until more-advanced care can be found. Simply open the pouch, remove and apply ... it's that easy. Excess blood will be under control in seconds. The advanced clotting sponge contains zeolite, which helps blood clot up to three times faster than on its own. This item is a key essential for every medical supply kit.

### Specifications

- Fast acting
- Durable, waterproof and reusable
- Biohazard bag included
- Compact; fits almost anywhere
- Useful medical information packet

### MSRP

\$25

### URL

[www.AdventureMedicalKits.com](http://www.AdventureMedicalKits.com)

## 3 SOG Scout Pack

This pack holds all your gear without weighing you down and is perfect for traversing and surviving inside the city.

The SOG Scout Pack is constructed of Kondra 5000 nylon material coated in polyurethane. It features a quad-zip main compartment, which allows for quick access to bottom-loaded items, internal organization pockets and an impact-resistant top pocket for fragile items. Webbing lash points and external shock cords allow for carrying oversized items on the outside of the pack. Side compression straps and aluminum stave suspension distribute weight evenly for greater comfort.

### Specifications

- Padded shoulder straps for added comfort
- Built-in hydration sleeve
- Internal laptop sleeve
- External, oversized item attachments
- Laser-cut Hypalon MOLLE panels
- Oversized zipper pulls

### MSRP

\$189.99

### URL

[www.SOGKnives.com](http://www.SOGKnives.com)

## 4 Fire SPAX

An amalgamation of fire axe and Halliganbar, the Fire SPAX is one tough tool, guaranteed to aid you throughout your urban survival crises. Its one-piece, carbon-steel body is highly durable and can chop its way through most materials fast and effectively. Use the extended backend as a pry bar for a multitude of city-based uses. The laminated hardwood handle assures a firm grip with every movement, and the blade cutout works to open and close fire hydrants and gas lines. When the city is crumbling around you, it's good to have this trusted tool by your side.

### Specifications

- 1074 carbon steel
- Laminated hardwood handle
- Nylon sheath included
- Powdercoat blade finish
- Full-tang construction

### MSRP

\$62.99

### URL

[www.OntarioKnife.com](http://www.OntarioKnife.com)



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## The Siege®

This lantern has survival instincts. It runs on high for 30 hours, or on low for over 12 days. It's waterproof, floats, and hangs right side up or upside down. You can even set it to message S.O.S. for 18 days in red mode.

## Enduro®

When you need hands free illumination that moves with you, you need the Enduro headlamp. It's one of the lightest, and most comfortable headlamps available today.





5

## Cache Cap

Urban survival relies upon blending into your surroundings and still being able to carry your gear. This amazing, new cap helps you do just that.

Hidden on the underside of the cap and brim are six distinct pockets—perfect for holding numerous small survival items. These can include flat blades, bandages, needles, fish hooks, antibiotic creams, water purification tablets, and even extra cash and credit cards, to name a few. The cap, itself, is constructed of breathable cotton and can be adjusted to fit nearly any head size. It is available in charcoal gray. Keep your valuable goods hidden from watchful eyes.

### Specifications

- 100% cotton
- Hook-and-loop adjustment strap
- Looks like an ordinary cap
- Six internal pockets
- Holds and hides small survival gear

### MSRP

\$20

### URL

[www.WazooSurvivalGear.com](http://www.WazooSurvivalGear.com)

6

## Urban Survival Kit

You never know when a natural disaster or man-made crisis will strike; it's better to be prepared for anything with the Urban Survival Pack from S.O.L.

This comprehensive kit has everything you need to survive for the first 72 hours of nearly any urban emergency. The kit's contents cover all categories of survival. From fire making to food and water to communications and first aid, you'll have exactly what you need when times go bad. All products fit into the included grab-and-go backpack, which stores away easily when not in use. This pack is a must-have for each member of your family.

### Specifications

- One-person pack
- 72-hour capacity
- Compact, easy to carry
- Disaster relief items
- Informative medical and travel guides

### MSRP

\$80

### URL

[www.AdventureMedicalKits.com](http://www.AdventureMedicalKits.com)

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## RFID Travel Vest

This 26-pocket vest allows you to carry electronics and numerous small items out of sight. It features an RFID-blocking pocket to protect your passport or credit cards from high-tech skimmers. The vest is made of lightweight and breathable poly fabric treated with Teflon for optimal water and stain resistance. Travel anywhere in the city knowing your electronics and other personal gear are safe.

### Specifications

- Incredibly lightweight
- Water and stain repellant
- Multiple internal pockets
- Stylish design
- Breathable fabric

### MSRP

\$135

### URL

[www.ScotteVest.com](http://www.ScotteVest.com)

# GEAR

8

## Targa Knife

At first glance, the Targa knife appears simple and nondistinctive. But upon deeper inspection, this knife is really a super-sharp powerhouse. Constructed of VG-10 steel from Japan, this minimalistic, quasi-tanto-shaped blade offers some of the best edge-retention characteristics in the industry. Its all-steel handle features a locking mechanism that's been tested at more than 1,000 pounds of force, yet it opens smoothly and quickly with only one hand. The Targa locking mechanism self-adjusts over time and is easily cleanable for reliable use for many years to come. An included belt clip makes this concealable knife the perfect everyday carry.

### Specifications

- Ultra-slim design
- Tanto-style blade created from Japanese steel
- One-hand opening and closing capability
- Reversible, low-carry belt clip
- Great for everyday carry
- Easily cleanable for long-term use

### MSRP

\$140

### URL

[www.SOGKnives.com](http://www.SOGKnives.com)



6

5



8



# HUNTERS SEE REALITY

Survival means being able to feed yourself and your family. If you can hunt, you can put meat on the table. That's simple truth.

*Be equipped. Be ready.*



1898








1898GH



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# DEPLOYING YOUR EDGE

## THE STREET IAIDO WAY TO GET YOUR SELF-DEFENSE BLADE INTO ACTION FROM ALL TYPES OF CARRY POSITIONS

STORY BY JASON DEATHERAGE | PHOTOS BY WARREN BRUNS

**I**aïdo, or *iaijutsu*, is the Japanese art of drawing the sword from its scabbard. In ancient times, an efficient draw could often make the difference between life and death for a swordsman.

Less commonly known, but just as important: The relatively fragile nature of the *saya* (scabbard) meant that a sword could cut through the scabbard if drawn improperly. Consequently, the swordsman needed good technique to prevent cutting himself—even before the fight began.

The combination of these factors gave rise to an enduring and surprisingly deep art that has many benefits for the serious practitioner. However, we can also draw more immediate, practical benefit from some of the principles of iaido and put those principles to use in our day-to-day self-defense skills.

These days, few of us carry swords (even those of us who routinely teach the use of the sword), but in many jurisdictions, we still enjoy the ability to carry knives of various types and sizes. We are less likely

than ever before in history to have to use our knives in self-defense. However, if we carry a knife for that purpose, we should be well versed in how to effectively and efficiently get it out and into service for self-defense.

### DEFINING “DEFENSE”

First, we need to examine the role of deadly weapons in self-defense. We need to understand that as law-abiding citizens, we will likely be under harsh scrutiny if we use weapons in self-defense, even in the most permissive of jurisdictions.

Accordingly, the use of weapons such as knives and guns should always be a last resort and used only enough to stop aggression that truly threatens someone's life. Carrying weapons is a great responsibility, and we should be correspondingly calm and measured in any and all situations in which they might be required.

Also, for the purposes of this article, please become familiar with the specific laws in your jurisdiction regarding carrying knives, whether openly or concealed. Some



**“WHEN DEALING WITH POTENTIALLY HOSTILE PEOPLE, IT IS TO OUR TACTICAL ADVANTAGE TO SEEM INNOCUOUS AND HARMLESS.”**

of what we'll cover will involve drawing fixed blades from concealment, which might not be legal where you live. Please make yourself familiar with these laws—and, as always, take full responsibility for your own actions.

**A WORD ABOUT STREET IAIDO**

Much like drawing a pistol, we want to make sure drawing our knife is efficient and direct. We want to eliminate wasted movements, and we want to become able to make practical use of parts of the draw that, at first, don't seem to be combatively effective.

There are many ways to accomplish an effective draw from all sorts of carry positions and postures. If we are serious about how we carry, we need to be able to draw effectively from a variety of positions—from sitting to standing, crouching, lying prone or supine, etc. Like the samurai from whom we inherited this art, we need to be able to bring our tools to bear on a situation, regardless of our physical circumstances, and we must train ourselves to do so.

In polite company, it is considerate to keep our weapons discreetly concealed. As weapons carriers, we are protectors of those around us, and we want to avoid intimidating people unnecessarily. We must avoid the impulse to show off the fact that we're armed.

When dealing with potentially hostile people, it is to our tactical advantage to seem innocuous and harmless. Often, displaying a weapon or attempting to intimidate someone is an escalating factor; as carriers of potentially lethal weapons, we must make sure our weapons only appear in true life-and-death situations. It is important, then, to carry our blades in ways that not only allow us to bring them to bear quickly and effectively, but also allow us to carry



➤ *Above, left and right:* Even a fairly large blade can be easily concealed with “normal” clothing. In this case, a 7-inch CRKT Hissatsu sits on the left hip, blade edge forward.

➤ *Near and far right:* The basic strong-side, reverse-grip draw starts with getting a positive grip on the knife and positioning the body to deal with the incoming attack. The draw punches forward with the pommel before slashing the opponent. This initial pommel strike is often neglected but can be very useful.

➤ *Near right:* The draw continues its arc and slashes the opponent.

➤ *Far right:* The point ends up oriented at the opponent, ready to stab, if necessary.







› Above: The attacker has his blade out and comes for us, so we get a grip on our knife.

them discreetly and comfortably.

Lastly, I should mention that this article should not be taken as a how-to on knife fighting; rather, it is an exploration of the very first moment of getting the knife out of the sheath and into action. Various styles and methods of knife fighting exist, and it is assumed that the reader is pursuing such training with a competent instructor, if that is their interest. By exploring the principles of the draw in this fashion, an opponent will hopefully never be given an opportunity to fight with us.

### STRONG-SIDE DRAW

Our first carry position is strong-side, in-waistband carry, with the edge of the blade facing forward. I prefer this to the usual strong-side, blade-edge-backward belt sheath carry because of the more-efficient draw options available if the edge is already toward the opponent.

For this carry position, I like to use sheaths without clips or protruding hardware and secure them in a semi-traditional fashion with simple cord and a bead or a knot. Even if sheath retention is tight, the cord will retain the sheath as one draws the knife. In this way, one can carry a surprisingly large knife comfortably and discreetly and have a couple of effective draws available.

From this position, a draw is possible with either hand, although the most effective draw will be with your strong hand. The hand that is not engaged with the knife should be held up and close to the chest



› Left, top: We meet the attack with our blade, cutting flesh, rather than bothering with his knife. Our other hand takes a supportive role, guiding his knife hand into a safe position.



› Left, bottom: We continue into the space left by his attack, maintaining contact and positioning ourselves to stab, if necessary.





or throat to keep it out of the way, but still “awake” and ready to use, if necessary.

### REVERSE-GRIP DRAW

As soon as one identifies an incoming threat, slide the strong-side foot back, covering the draw, protecting the weapon hand during the draw and getting the bulk of one’s body turned out of the way of the opponent. Grip the handle in a reverse grip and draw with the pommel forward, beginning a single arc of movement that strikes the opponent with the pommel, slashes them and then leaves the point in a position to stab, if necessary.

It is critical to be able to use all parts of the knife as a weapon and be able to strike or cut any part of an opponent’s body. Cutting or striking their weapon hand or arm is often the quickest way to deal with an attack.

This draw can be practiced at various angles, such as straight across horizontally, upward diagonally, etc. Hopefully, the fight is finished right there. If not, one is still in good position to transition the grip to whatever is appropriate to the techniques of one’s prior training.

➤ A balanced and open stance enables us to maneuver efficiently and effectively.

**“CARRYING WEAPONS IS A GREAT RESPONSIBILITY, AND WE SHOULD BE CORRESPONDINGLY CALM AND MEASURED IN ANY AND ALL SITUATIONS IN WHICH THEY MIGHT BE REQUIRED.”**

### STANDARD GRIP, STRONG-SIDE DRAW

This is how the Roman legionaries used to draw their *gladii* (their short stabbing swords). The *gladius* was carried on the legionary’s strong side, so a cross draw was not an option for them.

Reach back, turning your hand over, and grip the handle, drawing the blade up and out of the sheath. While this can be practiced at various angles, for now, make sure the blade cuts a vertical arc, moving upward as it comes out. This cut is effective against an arm moving toward your face.

### WEAK-SIDE CARRY

Traditionally, swords were carried on the weak side to enable a cross draw. Interestingly, a great deal of the wrist locks we see in martial arts such as *aikido* and classical *jujitsu* are actually rooted in dealing with drawing swords from this position. The reason someone would grab your wrist and continue to hang on is because they are attempting to control your sword hand as you attempt to draw your blade.

You can carry your knife the same way the old swordsmen did, which gives some advantages for drawing while sitting or backed right up to a wall. You can also choose to carry your knife blade up or blade down, which gives you various types of draws to choose from.

The samurai generally carried their swords blade edge up, but for a knife, blade edge down



***“IT IS CRITICAL TO BE ABLE TO USE ALL PARTS OF THE KNIFE AS A WEAPON AND BE ABLE TO STRIKE OR CUT ANY PART OF THEIR BODY.”***

requires less contortion of the wrist to draw naturally in a cross draw. In fact, in the old West, Bowie knives would often be carried blade down.

**REGULAR CROSS DRAW, BLADE EDGE DOWN**

Simply reach across, grip the knife and draw it forward. Don't forget the pommel's ability to strike as the knife travels forward. It will pass the initial target anyway, because the blade is turned to bring the edge into play; consequently, the principle of efficiency would indicate that you use that potential hit if it can be usefully applied.

As the knife is travelling forward, it can slash across. Remember: Don't slash any farther than necessary, and leave your point in a useful position.

**CROSS DRAW, BLADE EDGE UP**

Drop the front shoulder a bit to let the wrist sink, letting the thumb wrap underneath the handle, and start the grip on the knife. You can control the angle of exit by turning the sheath with the off hand. If you don't turn the sheath, a vertical cutting arc from top to bottom naturally appears.

**PARTING NOTES**

These are just a few of the potential draws you can use from only a couple of carry positions. There are many other positions and draws available, so experiment freely. Always check your results against some basic principles: Does your carry position allow a quick and fumble-free draw? Does your choice of draw protect you during the draw, or does it leave a dangerous opening? Does the cut follow a natural momentum and direction? Does the draw use the attributes of the weapon to maximum advantage? Can you identify the advantages and the disadvantages that will be present in any carry or draw?

Hopefully, these basic techniques, drawn from an ancient art, can be of use in your personal training regimen.

Stay safe; protect others. **ASG**



› As the opponent thrusts, we reach for our knife and gauge his range and approach.



› Offering a narrow target, we draw while pulling our weight back a bit—to increase the distance for the opponent to reach—and also free our front foot.



› We step across slightly to get our body off the line and cut downward through the arm.



› We then step into the space behind the opponent's arm and place ourselves in an advantageous position from which to negotiate the end of the opponent's attack.

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# SURVIVOR *FLASHBACK*

## A HAT TIP TO *THE REVENANT* AND THE TRUE-GRIT FOREFATHERS OF WILD COUNTRY SURVIVALISM

BY MICHAEL D'ANGONA

PHOTOS COURTESY OF THE DISCOVERY CHANNEL

**U**nless you've been stranded on an undiscovered island for the past couple of years—like Tom Hanks in the movie, *Cast Away*—you've seen or at least heard about a movie that came out in 2015 that grabbed hold of the word, "survival," and wrung it out to the last, bloody drop.

It's called *The Revenant*, "revenant" being a word most folks have never heard in their lives. Never mind that. They've heard of it now, what with huge box office revenues and all kinds of awards for the filmmakers.

In it, Leonardo DiCaprio gets his butt chewed into hamburger by the meanest, baddest, most-pissed-off bear ever seen on a movie screen. DiCaprio must not only survive that encounter but also somehow fend off attacks by a crazed

fellow trapper and Indians who know how to use longbows, tomahawks and guns. They're so fierce, it's hard to tell which is the most pissed-off about the trappers invading their lands—the bear or the Indians.

As if this mix isn't enough for DiCaprio to handle, he must also endure a trek of some 200 miles through a rugged mountain landscape, where winter has locked down with its frozen grip.

Just watching it makes one feel cold. The director of the film, Alejandro González Iñárritu, said the actors look so cold for a good reason: They *were* cold!

Iñárritu, who won the 2015 Best Director Academy Award, took his film company into the rugged peaks along Alberta's Bow and Kananaski rivers in August 2014 to begin shooting this epic movie about a mountain man's survival tale.







*The Revenant* is adapted from the novel by Michael Punke, and the movie is presented with the words, “Inspired by true events.”

Those events are based loosely on the legendary survival trek of fur trapper Hugh Glass in 1823. Mauled by a grizzly and left for dead by his companions in what today is South Dakota, Glass made his way to Fort Kiowa in a painful but inspiring journey that has been the subject of numerous books and the feature film, *Man in the Wilderness* (1971).

## BACKSTORY

The story envisioned by author Punke—and carried to the movie screen by Iñárritu—is not an exact factual presentation of the Hugh Glass legend.

“We’re not making a biography,” Iñárritu explained as he assembled a small army on the banks of the Bow River—cinematographers, horse wranglers, stuntmen, set decorators, mechanics, drivers, food services and actors.

Iñárritu was plunging into the exceedingly difficult project with a hot hand: His previous film, *Birdman*, had won Academy Awards. Born in Mexico, and with a background of international adventures and creative enterprises, Iñárritu was accustomed to overcoming whatever lay



◀ Above: The amount of attention to detail shined through the epic movie from start to finish.

◀ Below: Guided by sheer will to survive and the love of his family, Hugh Glass (Leo DiCaprio) had to navigate treacherous terrain during a vicious winter.

in his path, building a reputation as a demanding leader as a result.

The costs involved in this filmmaking task force soared from lofty heights of around \$95 million when the cameras first began rolling and eventually into the stratosphere, at \$135 million. Producers came and went, bankers trembled, and rumors floated through the trade media. The shooting of the film took the entire winter of 2014–2015 in Alberta and then

moved to Montana. When the company ran out of snow there, it had to send a team to another hemisphere and country where winter still reigned: Argentina.

Through all this, Iñárritu kept his hands on the reins and his focus on making a superb film. He won his battle.

## THE CRITICS

The movie that was so difficult to make and was such an obvious success with







◀ Above: Mountain man John Fitzgerald, played by actor Tom Hardy, was a fierce adversary. But ultimately, he was no match for Glass.

◀ Below: Alejandro Iñárritu (left) and Leonardo DiCaprio on location... somewhere in the wilds of Alberta, Canada

moviegoers—and those who bestow awards and honors on filmmakers—is a whopping two hours and 31 minutes of brutal realism amid mountain splendors so overwhelming, they hold the viewer transfixed, carried back to the time of the fur trappers in 1823. There are scenes in *The Revenant* so violent that they repel some people, causing them to look away—or even stay away. Obviously, such folks are not in the majority, as the box office results testified.

Hollywood insiders with Academy Award votes showered praise upon *The Revenant* with 12 nominations. DiCaprio won best actor, Iñárritu best director, and Emmanuel Lubezki won for cinematography.

## THE REEL DEAL

One of the major reasons for *The Revenant*'s finances causing much hand-wringing and for the movie's ultimate success stems from as early decision made by Iñárritu and cinematographer Lubezki: They resolved to shoot the movie only in natural light. They refused to use the computer-generated techniques so prevalent today and in which the actors are photographed in front of a green screen in Hollywood, instead of places such as the Alberta wilderness.

Natural light, which is usually best during the last 90 minutes of the day, heightens realism to the ultimate. However, matching the shots day by day and getting the shots done in a 90-minute

timeframe are formidable tasks.

Clay Landry, the historical advisor and a technical advisor on the film, described the difficulties.

"In what they call 'The Golden Hour'—those last minutes of the day—it is cold. People are standing around, shivering. Soon, it will be too dark to shoot. Everything has to be ready. The sets, the cameras, the horses, whatever. Everything! And now, the actors have to do their

thing—without blowing their lines."

The "natural light" images brought to the screen by the Iñárritu-Lubezki commitment make *The Revenant* a visual experience almost without equal. For whatever scenes of gross violence might have you squirming in your seat, others will open your eyes wider with their sheer splendor. Mountain peaks and ridges, frozen lakes, wilderness creeks and rivers come at you and are irresistible.





**“LANDRY PUT HIS EXPERTISE TO WORK IN MAKING SURE EVERYTHING IN FRONT OF THE CAMERAS WAS AUTHENTIC—THE PACKS AND BAGS, THE SADDLES, LEGGINGS, SHOES AND RIFLE CASES. AND, OF COURSE, THE RIFLES, THEMSELVES.”**

While Hollywood moguls were, no doubt, dancing with joy over *The Revenant*'s success, the real prize was the reward for those of us who bought tickets and saw the movie. This movie soars beyond what you might call the “mountain man” genre. It is a classic survival film, in my opinion, destined to stand the test of time.

### THE TAKEAWAY

*The Revenant* is one of those rare marvels in which the latest sound and photography are backed by great acting and a commitment to storytelling in a classic way: *You are there!* What's happening on the screen is very real to all your senses. Turn away from the gross violence, if you must. But don't tell me that what you were seeing did not grip you.

Director Iñárritu won his gamble. This hard-to-please, perfectionist filmmaker took on the weather, immense terrain of mountainous backcountry and the demands of recreating the world of the mountain men as it existed in 1823.

I talked with the man who joined the film company as historical and wilderness technical adviser to help make the “re-creation” accurate down to the flint stone fire starters that were used. Mountain man authority Clay Landry, author of many historical articles, journeyed from his Montana home to join the movie company in the first weeks of production. He put his expertise to work in making sure everything in front of the cameras was authentic—the packs and bags, the saddles, leggings, shoes and rifle cases.



➤ *Right: American Survival Guide* readers might remember actor Tom Hardy from his other epic film that keyed on surviving behind enemy lines: *Black Hawk Down*.

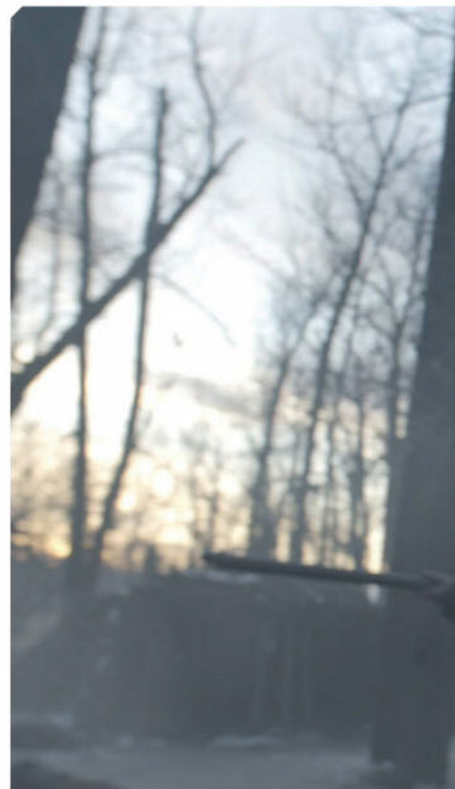
And, of course, the rifles, themselves.

“They already had the rifles when I got there,” Landry told me. “They were Kentucky- and Tennessee-type flintlocks, rifles and military-style smoothbores. DiCaprio's Hugh Glass rifle was special—custom made. It was modeled on the Pennsylvania Lancaster style Hugh Glass is said to have used. I was very pleased with the rifles.”

Landry was also pleased with the way the actors used the rifles and all their gear. He set up a sort of “mountain man boot camp” when he came on board as an advisor for the film. Every day for months, he worked closely with DiCaprio, Tom Hardy, Will Poulter and many other actors, not only making sure they used the weapons properly, but also sharing the mountain man lore they were eager to learn about to enhance the film's realism.

From the beginning, director Iñárritu kept reminding his actors and his film crew to ignore the cold and whatever discomforts they experienced. “This film is about survival,” he told them.

Indeed! **ASG**







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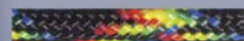
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# BLACKFEA *BUSH* *BLADES*

FIND OUT IF JOE HUNNICUTT'S  
BLACKLORE AND BUSHTOOL  
BLADES WORK AND FEEL AS  
GOOD AS THEY LOOK.

STORY AND PHOTOS BY KEVIN ESTELA





# THER



**D**uring the Italian Renaissance, an artist achieved "master" status by creating a masterpiece. This work of art embodied the heart and soul of the painter or sculptor, not to mention the countless hours of painstaking attention to detail. Examining the masterpiece, onlookers knew they were viewing perfection and determined that the artist achieved a level of skill reflective

of a master. Compared to other pieces of artwork, the masterpiece was finished to a higher level indicative of practice.

"Master" can take many forms, including knifemaker.

Mechanization has replaced mastery since the dawn of industrialization, and much of the character has been taken out of products with assembly line fabrication. There are a few craftsmen today, however, who embody the tradition of



standing behind their work as art and even fewer who view their work as functional art.

Joseph Hunnicutt of Blackfeather Knives is one such craftsman with noteworthy skill. He is the one-man operation responsible for hand-cutting, grinding, heat-treating, handling and finishing the Blackfeather Knives lineup.

I was curious about the knives I had heard so much about and reached out to Joe. He sent me two of his most popular models for an authentic field review.

From the moment I handled the Blackfeather Blacklore and Bushtool, I understood the level of mastery each blade represents. After that moment, it was up to me to unleash each blade's potential. I wanted to try out each knife and see how it performed traditional bushcraft tasks while practicing my skills.

What follows is a collection of real-use experiences with each knife to evaluate the form and function of these modern bushcraft works of art.

➤ *Right, top:*  
The Blacklore

➤ *Right, bottom:*  
The Bushtool

➤ *Below, bottom:*  
Both Blackfeather Knives provided were constructed with acrylic red liners. When used with natural handle materials, these liners provide a better mating surface for the handle epoxy and allow for expansion/shrinking of wood in varying conditions.



***“THE BLACKLORE IS A KNIFE ROOTED IN THE TRADITION OF THE POPULAR WOODLORE PATTERN USED BY FAMED BRITISH BUSHCRAFT AUTHORITY RAY MEARS.”***

#### **BLACKLORE WORK**

The Blackfeather Knives Blacklore is a knife rooted in the tradition of the popular Woodlore pattern used by famed British bushcraft authority Ray Mears. The Scandinavian-ground spear point O1 steel blade, which has an extremely comfortable grip for the largest of hands, along with its familiar outline are the features traditional bushcraft enthusiasts will appreciate in this knife design. Highly polished flats of the blade, fish-eye bolt fasteners and red acrylic liners under the black Micarta handle slabs add to the aesthetic appeal and durability of the blade.

I recently used the Blacklore in traditional bushcraft tasks while exploring the mountains of British Columbia. Because every knife has a different personality (attributed to the shape of the handle, the balance point and the edge geometry), I slowly warmed up with the knife by creating various cuts into a green sapling stick. These cuts along a single stick, known as a “try stick,” help gauge not only the skill of the user, but also the quality of the blade. From beveling the ends of the stick to creating 90-degree ramps, notching, reducing diameter and squaring edges, the blade worked exceptionally.

Its fine edge worked effortlessly and, after making pile after pile of shavings, my hands were not fatigued. This is an important point to consider. A true bushcraft knife should



be comfortable for extended periods of use. The sizeable handle of the Blacklore enables the user to work with it for hours on end with no discomfort.

Moving beyond basic carving, I used the knife more aggressively. While preparing my small wood-burning stove to boil water for tea (because this is a bushcraft knife, and a true British bushcraft enthusiast will find an excuse to use their blade for this reason), I processed wood into fuzz sticks, kindling and small fuel.

As I hiked along a riverbank, I found a bend that collected extremely seasoned, dry branches. With a river rock propped on log, I cracked the branches to expose the grain. I batoned through the wood, using the Blacklore to create smaller pieces. The extended length of the handle provided plenty of safety room to avoid the swing of the baton hitting the back of my hand.

With yet another piece of driftwood, I feathered it easily and found that the handle provided a strong grip. The highly polished Scandi grind was predictable as it created curls from the wood. These very fine wood shavings were turned into flame effortlessly with a scrape of the 90-degree spine of the blade, and tea was enjoyed shortly after bringing water to a boil.

## TO THE BUSHTOOL

The Blackfeather Bushtool is slightly smaller overall than the Blacklore. It quickly became my favorite of the two blades. The Bushtool was inspired by the ideal blade of Canadian bushcraft authority Mors Kochanski and is a true workhorse. I found it perfectly capable of tackling any traditional bushcraft task I asked of it. In addition, it paired perfectly with a Victorinox Swiss Army Knife equipped with a saw and my Gransfors Bruks Mini-Hatchet. With this tool combination, I was equipped with a minimalist bushcraft cutting kit (knife, saw and chopping tool).

The Bushtool has a thick handle meant for comfortable use during prolonged carving. As a point of reference, the handle is not as long as the Blacklore's, but its thickness makes it just as comfortable to use for hours. The Bushtool features an upswept, puukko-style blade and a welded metal strike plate in the pommel.

The purpose of the pommel is often misunderstood. A knife pommel makes a poor substitute for a hammer or mallet when used on tent pegs or nails of smaller diameter than the handle, itself. The



# LEATHER VS. PARACORD

Paracord can be used for baldric carry, but it comes with its setbacks. Paracord is approximately 1/8-inch diameter and can dig into the neck and shoulder. The synthetic outer braid can irritate the skin as it rubs against it. A more traditional material for lanyards is leather. With a basic flat braid, it becomes an attractive and functional strap that is perfect for the bushcraft kit.

Braided leather makes an extremely functional carry method for a bushcraft knife. The braided strap tends to grip the shoulder area of a shirt and hold the knife in place, preventing the pendulum effect of slicker synthetic cords. It also does not cut into

the neck or shoulder as much, because the braid is generally wider than the typical cobra-braided paracord setup. If necessary, the individual leather strips can be used as emergency cordage. Unlike paracord, leather is a natural material, and for the environmentally conscious, it can be left in the wild with peace of mind knowing it will biodegrade much faster than nylon.

If an O1 steel blade and leather sheath are carried for tradition, leather is more traditional than paracord. As leather is used and handled, it will absorb the oils in your skin and become more resistant to the elements.



› Left: A leather pouch sheath that fits either blade is available from Blackfeather Knives. A length of paracord or lacing will help retrieve the blade, which is carried deeply in the pouch.





› Author Estela uses the Bushtool with a ferro rod to ignite old man's beard.



***“THE VERY FINE WOOD SHAVINGS WERE TURNED INTO FLAME EFFORTLESSLY WITH A SCRAPE OF THE 90-DEGREE SPINE OF THE BLADE.”***



◀ *Right:* The author used the Blacklore to create feather sticks while hiking along a river in British Columbia. The seasoned wood was shaved easily.

◀ *Above:* Estela found an old fire ring while hiking in Squamish Valley. When other tinder is not available, he uses the pommel plate of the Bushtool to create charcoal powder that easily takes a spark from a ferro rod.

pommel plate is intended to absorb the impact of a baton against it or to withstand very light pounding on soft materials such as charcoal and natural cordage materials. If a natural handle material is chosen, the metal pommel plate will protect it when the knife is driven, tip first, into a log using a baton.

In testing, I crushed charcoal from an established fire ring and created an orange ember in the coal powder with a ferro rod. I also used the Bushtool to pound into a log to create leather lacing.

The Bushtool is an excellent slicing blade. The continuous curve of the blade

› *Below:* The Bushtool pairs perfectly with the Victorinox Outrider, as well as the Gransfors Bruks Mini-Hatchet. With this trio of cutting tools, a bushcrafter has what is needed to slice, saw and chop.





## Bushtool

### Specifications

- Blade steel: O1
- Blade length: 3.75 inches  
(Custom downsized. Standard is 4.25 inches)
- Blade thickness:  $\frac{1}{8}$  inch
- Handle length: 4  $\frac{7}{8}$  inches
- Handle material: Black Micarta
  - OAL: 8  $\frac{1}{2}$  inches
- Weight: 6.55 ounces
- Sheath: Leather

**MSRP:** \$250



## Blacklore

### Specifications

- Blade steel: O1
- Blade length: 3  $\frac{3}{4}$  inches  
(Custom downsized. Standard is 4.25 inches)
- Blade thickness:  $\frac{1}{8}$  inch
- Handle length: 5 inches (Custom size. Standard is 4.75 inches)
- Handle material: Black Micarta
  - OAL: 8  $\frac{1}{2}$  inches
- Weight: 7.05 ounces
- Sheath: leather

**MSRP:** \$240

and the handle configuration prevent your knuckles from dragging across a cutting board. The knife excelled in backcountry camp kitchen duty. Paring with the knife was easy, because it rolled in the palm of my hand when needed. The Scandi grind sliced wood just as easily, and the keen edge was unaffected after prolonged use on hardwoods.

The ricasso area forward of the handle is unbeveled but is contoured to allow for placement of the thumb while using the chest-lever or edge-backward grips.

Like the Blacklore, the spine of the Bushtool is squared to a sharp 90 degrees for scraping purposes. For fire-starting, I used the spine to scrape resinous wood into tinder shavings; on others, I used the spine on a ferro rod to spark old man's beard into flame.

Joseph Hunnicutt's heat treatment of O1 steel is fantastic, and I saw no deformation to the blade or rolls that honing with a ceramic rod could not realign.

### CARE AND CARRY

After using both the Bushtool and Blacklore, their steel blades developed a very deep patina with swirls of purple, blue and yellow. This natural oxidation of the blade helps prevent the steel from rusting and is a testament to honest use. Because both knives were used to carve wood with running sap and prep food with varying levels of acidity, the patinas that formed were inevitable. (If the user wishes to expedite this process, simply sticking an O1 blade into a potato overnight or coating it with mustard are alternative methods.)

I wanted to see how well the blades cleaned up, so I used charcoal on them as a mild abrasive in the field and Flitz polish when I returned home. The charcoal didn't remove the patina, but it did wipe away mild surface rust where the patina didn't form as uniformly. With prolonged polishing, the Flitz polish returned the steel to a brilliant mirror.

Also worth noting is the fit of the knives in the sheath provided by Blackfeather knives. It is meant to carry either knife safely and deeply in the pouch. There is also a fire steel loop that is designed for a standard,  $\frac{3}{8}$ -inch "army-sized" ferro rod; carried along with the blade, this loop provides the means to make a fire. The belt loop will accommodate up to a 2-inch belt. The handle of the Blacklore will stick out slightly more than the handle of the Bushtool. (In testing I found a simple lanyard made from rawhide or paracord made accessing each of the knives much easier than pinching the section of the handle left exposed while the knife was sheathed.)

### FIELD MASTERY

As stated at the beginning of this review, a Renaissance-era artist was considered a master after creating a single masterpiece. Some artists became known for accomplishing more than one, and we know them today as history's best.

Joe Hunnicutt is a rising star—a master—based on what he produces. In my opinion,

each of his knives is an American-made masterpiece. I would stack his knives up against any of the high-end, high-priced, British-made Woodlore clones.

Unlike the museum pieces of Leonardo and Michelangelo, and unlike the "safe queen" knives of armchair bushcrafters, Blackfeather Knives will be found in the hands of outdoorsmen for years to come.

While they are finely finished with great attention to detail, these knives are meant to be put to work. That being said, after extensive use and considerable hours spent behind each blade, I can attest that these knives are truly functional works of art that didn't let me down in the field. They will not let you down, either. **ASG**

### SOURCE

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# ON THE RECORD WITH JOE HUNNICUTT

**ASG:** HOW DID YOU DECIDE TO BECOME A KNIFEMAKER?

**JOE HUNNICUTT:** I have always had a love for knives from a very young age. I actually made my first knife when I was probably 11 years old. The proverbial final nail was when I wanted to purchase a particular knife, which cost about \$400. I wanted the knife so badly that I actually sold a firearm to make the purchase—and ended up disliking the knife. At that point, I decided to dive into designing and making my own line.

**ASG:** DO YOU HAVE ANY KNIFEMAKER ROLE MODELS?

**JH:** There is a very small handful of makers for whom I have a great amount of respect, but I wouldn't say any of them is a role model. If I had to pick one maker for whom I have the utmost respect for skill and business practices, I would have to say, without a doubt, it would be Ben Orford.

**ASG:** WHAT WOULD A READER BE SURPRISED TO KNOW ABOUT YOU?

**JH:** This may be a slightly generic answer, but I would have to say I really do have a beautiful wife and daughter. I have developed some amazing friendships since beginning this journey—and especially with the use of social media—but most do not realize I have a family.

I work a full-time job and then come home and work what has become another full-time job. My family has made a lot of sacrifices for me to follow my dream, and they understand I am working toward a goal of providing them with a better future. But that does not help with the time away from them. It is extremely difficult to work a full-time job, be a family



Below: The Blackfeather Knives O1 steel developed a deep patina during the course of reviewing the knives. This oxidation protects the blades, gives them character and can be easily removed with light polishing if a brighter finish is desired.



Top and above: Author Estela used the Blacklore to create feather sticks while hiking along a river in British Columbia. The seasoned wood was shaved easily.

Left: The Blacklore was an absolute performer in creating various cuts in a "try stick." With and against the grain, the fine edge cut on command and was very controllable.



man and try to build a business.

**ASG:** WHAT KNIFE DO YOU PERSONALLY CARRY?

**JH:** My personal blade is the prototype Bushtool. I fell in love with the functionality of the blade from heavy camp tasks to general EDC use.

**ASG:** WHAT'S NEXT FOR BLACKFEATHER KNIVES?

**JH:** Over the last several months, I have been taking a very hard look at what works and what does not. There was a time when I would worry about orders coming in; now, I find myself worrying about getting orders out the door!

I have been truly humbled by the way people have taken to my knives. I have been working through the issues of being a one-person operation and making arrangements to get knives out the door and into customer's hands much quicker.

I can't go into much more detail at the moment, but there are some big changes coming very soon in regard to my business plan. One thing I can bring attention to is that I am currently working on and testing some new knives for our tactical customers.

**ASG:** DESCRIBE YOUR AVERAGE CUSTOMER.

**JH:** The average customer is someone looking for a knife they can rely on without a doubt. I suppose they would go by many names—bushcrafters, woodcrafters and even hunters. I do sell a lot of knives, as well, to people who consider themselves only collectors.

**ASG:** WHAT SEPARATES BLACKFEATHER KNIVES FROM OTHERS?

**JH:** This is actually a question I have a very difficult time answering. I approached several repeat customers with this question, and I got the same response from all of them: The consensus was two very key factors for any knife. The most common answer was comfort. I strive very hard to ensure the knife is extremely comfortable to use. The benefit of being a one-person operation is that I get to handle every single knife. If something doesn't feel quite right, I have the ability to fix it. If it's not comfortable for me, it either gets "tweaked" or the scales get cut off, and I start over.

The second most popular answer was about the sharpness of my knives. I take a lot of pride in sending out what I believe is one of the sharpest knives most people will ever lay their hands on. I used to struggle with getting my knives to what I have coined "stupid sharp," but I have dialed in a process I believe makes my edge second to none: Before any knife gets

shipped, it must push cut through damp tissue paper without the slightest rip.

**ASG:** WHAT DOES PRODUCTION LOOK LIKE? HOW MANY KNIVES DO YOU MAKE PER YEAR, AND WHAT IS THE TURNAROUND TIME?

**JH:** At the moment, and from day one, I have had my hands on every single aspect from start to finish. I get the steel as flat bar and cut the blanks by hand, shape them and grind bevels by myself. I do all my own heat-treat—with the exception of any CPM knives. I also do all the

handle shaping myself. The only part I do not do myself is the leather work. A good friend of mine, Victor Posey, does all the sheath work for me.

While I keep records, they are not the most detailed. I would guess that since the BLADE Show last year, I have made roughly 75 knives. My current turnaround time from order to shipping is running about five to six months. I am taking huge strides in getting that lead time down to about two months, but I have not implemented any of the new practices. I have worked out all the details, but I have not made my intentions public yet. **ASG**

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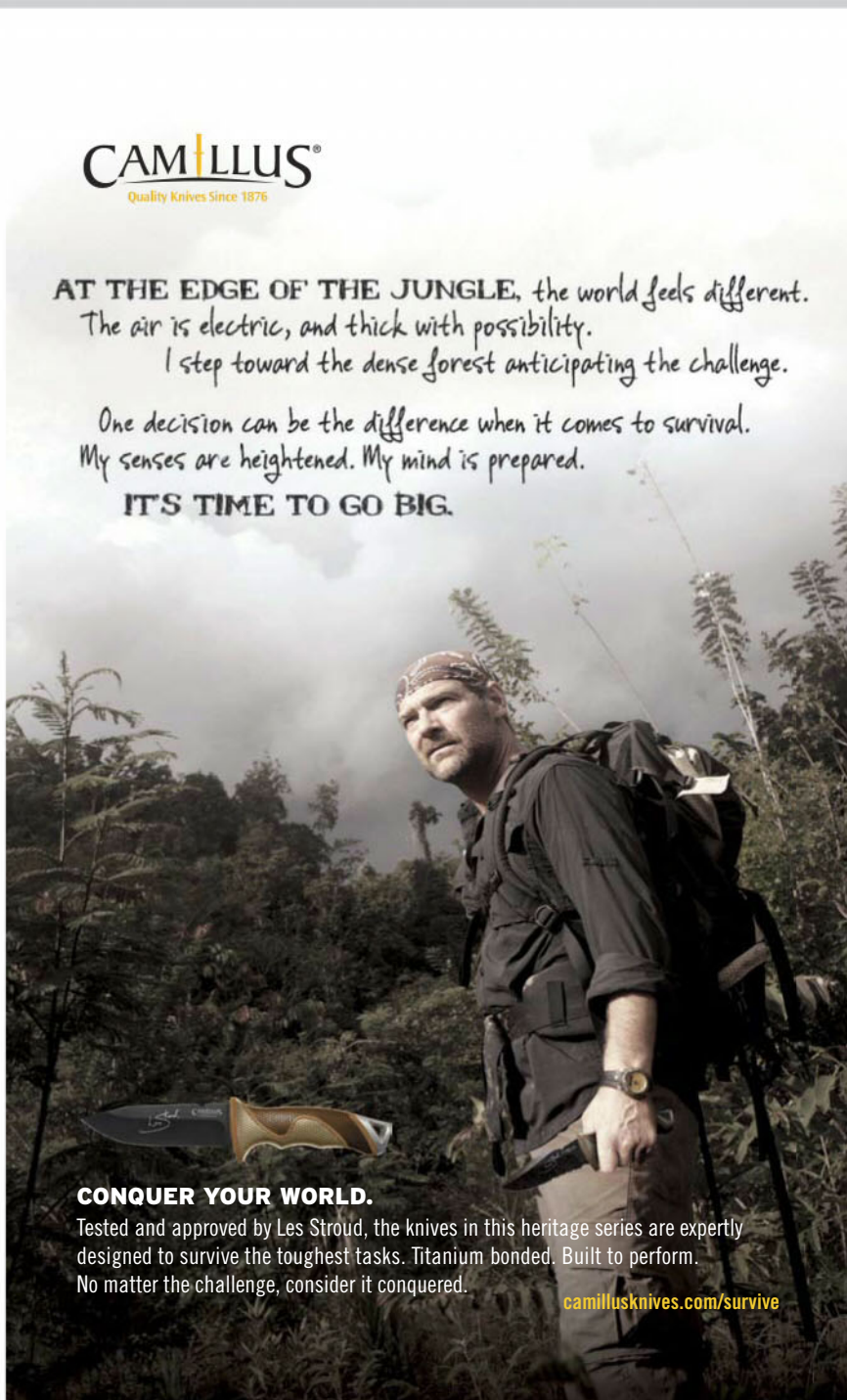
*AT THE EDGE OF THE JUNGLE, the world feels different.  
The air is electric, and thick with possibility.  
I step toward the dense forest anticipating the challenge.  
One decision can be the difference when it comes to survival.  
My senses are heightened. My mind is prepared.  
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# POWER ON THE FLY

**GET FULLY PLUGGED INTO  
BUYING AND MAINTAINING  
TODAY'S TOP PORTABLE  
GENERATORS.**

BY RYAN PRICE

**W**ith modern society's reliance on electricity in virtually all facets of its existence, it is very difficult for civilization to cut cords and function properly without electricity for any length of time. The abundance of cheap fuel has spoiled most people, and that has resulted in some difficult-to-break habits (and expectations).

Our indoor climates, food storage and prep, communications, lighting, utilities, entertainment and health all depend on the juice streaming through the circuits. When that's gone, it leaves an awfully big hole in our daily lives.

It doesn't matter where the next emergency will come from—



***“IF YOU ARE ONLY USING 50 PERCENT OF YOUR GENERATOR’S RATED POWER, YOU ARE WASTING A SIGNIFICANT AMOUNT OF FUEL.”***

# DO YOU NEED A STANDBY GENERATOR?



A standby generator is a large generator designed to power your entire home's needs at a moment's notice. It is wired directly into your home's electrical system and constantly monitors the power input from the grid.

When power from the utility line fails, an automatic transfer switch safely disconnects the utility feed wires and connects the generator feed. A signal is sent, which starts the generator and begins powering up your home. Automatic generators continue to monitor utility power and reverse the switch when the power outage ends, returning to standby mode.

They are usually powered by natural gas but can be hooked up to a stand-alone propane tank (which is recommended, because it keeps the unit self-sufficient). For example, a 250-gallon propane tank fueling a 7,000-watt standby generator will provide enough electricity to power a home for five continuous days.

Of course, contingency plans are needed when your propane tank runs dry. What then? Lights out.

earthquake, hurricane, terrorist attack—or even if there is a short-term grid failure scenario because of routine maintenance on the equipment. Having a reliable generator with enough watts to power a few of your essential appliances, such as a small fridge, along with lights can be a lifesaver.

## BUYING TIPS

The first order of business before you start kicking the tires on a variety of generators is to determine the right generator size for your needs. Select a few items around your home or shelter that you would like to keep running in the event of a power failure.

Each appliance should come with a label that tells exactly how many continuous watts it needs to power the device or tool. However, if that information is missing, it can be estimated via this equation: watts = volts x amps.

Make note of their continuous watts and the starting watts requirements of each appliance. Which one on your list has the highest starting watts? Probably the fridge or a furnace fan, because they take a lot of electricity to start, so make note of this number. Add up the continuous watts of all the appliances on your wish list and then add to the bottom line the appliance with the highest starting watts. This is the total wattage needed from your potentially new generator.

Once you have determined how many watts you will need, make sure to select a generator that runs slightly above your peak wattage needs. You may have to compromise. If your needs total 1,850 watts, consider a generator that can handle 25 percent more watts—or, a generator rated at around 2,200 watts. Remember that continuously running a generator at peak wattage will quickly burn it out.

Conversely, bigger doesn't always mean better. If you are only using 50 percent of your generator's rated power, you are wasting a significant amount of fuel. This is something you should factor into your decision, because fuel will become more expensive and harder to find during times of crisis.

## GENERATOR CARE AND MAINTENANCE

As with anything that runs on an engine or a motor, there will be some work on your part to keep it running smoothly. There's no reason to have a piece of equipment as important as a generator if, when you want to use it, it doesn't work.

Make sure you start your generator when you first buy it and then at least once every month thereafter.





- Before use, give your generator a basic cleaning and visual inspection. If it is an electric start, make sure the battery is fully charged and that the mounts and frame bolts are tight. Verify that the fuel hoses and connections are free of leaks. Keep the generator covered when not in use.
- Check the oil before starting your generator. Running it without oil will cause it to quickly seize up. Also, inspect the condition of its air filter on a regular basis and clean or replace it as needed.
- Do not start your generator while a load is applied, nor should you shut it down with a load applied. Plug in your equipment after you



**“THE ABUNDANCE OF CHEAP FUEL HAS SPOILED MOST PEOPLE, AND THAT HAS RESULTED IN SOME DIFFICULT-TO-BREAK HABITS.”**

have started the generator, and unplug all connections before you shut it down.

- A brand-new generator will need to have some time to break itself in. To help it do that properly, most generators will need their oil changed after the first 25 hours. After that, change the oil every 60 hours or so of use. Add to your emergency cache of gear enough oil reserves to change your generator’s oil at least two or three times.

- Many cheap generators can be damaged when they run out of gas. Right up until they run out of gas, they are busy pumping out wattage to your appliances and gear, and when they wind to a halt, they’re still trying to deliver the power. The electrical load will drain the magnetic field from the generator coils, and you’ll have to have them reenergized. Keep the tank full, and always remove the electrical load before you shut it down.

- Fuel breakdown, varnish and gum buildup from old, stale fuel are the primary causes of generator failure. If you plan to put your generator into storage, first drain the tank and carburetor completely. Always use fresh fuel and a fuel stabilizer.

- The longer the cord, the more voltage drop you will experience. Decreased voltage is bad for your appliances and electrical gear and leads to motor burnout. Invest in a heavy-duty 12-gauge cord and limit the run to no more than 100 feet.

Availability of portable generators soared at the end of the 1990s, and they’re now widely available in stores and online.



# DETERMINING THE WATTS YOU’LL NEED

One of the best pieces of advice you can find to help you buy the generator that is right for you is to answer the question, *What do I need a generator for?*

If you’re simply plugging in a lamp to light a campsite or you can’t miss your favorite TV show, even in a complete grid failure, you might need a small generator—one with around 1,200 watts.

However, if you need to run several computers, an air conditioner, three spotlights to watch the fence line and power a full satellite system for communications, you will need to look at generators that provide higher wattage.

To figure out the exact amount, find out how many watts individual appliances use. Add them all up, and find a generator that has a wattage rating that matches.

Remember to take into consideration that some appliances with electric motors require additional wattage at startup to run properly. Because most tools and appliances use 120 volts, and a generator’s power is measured in amps, remember that  $\text{amps} \times \text{volts} = \text{watts}$ .

APPLIANCE	CONTINUOUS WATTS	STARTING WATTS
LIGHTBULB (60 WATTS)	60	0
COFFEE MAKER	1,750	0
DISHWASHER	700	1,400
ELECTRIC FRY PAN	1,300	0
ELECTRIC RANGE, 8-INCH ELEMENT	2,100	800
MICROWAVE (TYPICAL SIZE)	625	800
REFRIGERATOR OR FREEZER	700	2,200
CLOTHES WASHER	1,150	2,300
CLOTHES DRYER (ELECTRIC)	1,800	5,750
FURNACE FAN(S): 1/8 hp	300	500
LIGHTS (WATTS LISTED ON BULB)	100	0
RADIO	150	0
SUMP PUMP: 1/3 hp	800	1,300
TELEVISION	300	0
ROOM AIR CONDITIONER	1,500	2,200
CENTRAL AIR CONDITIONER	10,000	11,250
CIRCULAR SAW	1,400	2,300
TABLE SAW	1,800	4,500
DESKTOP COMPUTER	700	0
MONITOR	250	0
LAPTOP COMPUTER	250	0



# INVERTER VS. CONVENTIONAL GENERATOR



The generators on these pages are conventional and inverter generators, the two most common types that offer some portability, relative economy and the minimum needed power to operate a few essentials.

Conventional generators have been around for quite some time. They consist of a fuel-powered motor running at a constant speed to produce a standard current that most houses and appliances require (120 volts at 60 hertz). If the engine's rpm fluctuates, the output will also fluctuate.

An inverter generator is somewhat of a new technology, taking advanced circuitry and magnets that create three-phase AC current, converted to DC and then inverted back to AC as a single-phase current. Which one is better

can only be answered by what usage the generator will see, how much current will be required of it and how much you are willing to spend.

Inverter generators are lightweight and very portable. Because size and weight aren't issues with conventional generators, they have larger gas tanks and longer run times than inverters.

However, inverters have more-efficient engines and can adjust the engine speed based on the load required (conventional generators typically run at 3,600 rpm, regardless). As a result, inverters are built to be very quiet: Most are around 50 decibels, which is about the same noise as a normal human conversation. Conventional generators are in the 70-decibel range, which is about the same sound as a car driving by.

A good thing about inverters is their ability to be paralleled together to increase the power output. Most of the ones featured here can be connected together via a sold-separately cable to double their power output (from identical models).

That's an interesting possibility, but some people appreciate the simplicity of the conventional generator, which is basically an engine with an alternator attached. There are no extra features to go wrong, and the systems and concepts used are decades old.

Price is always a huge factor, and although the price of inverters has come down in the last few years (and will continue to drop as the technology ages), conventional generators provide more power per dollar than inverters.



◀ Installing a whole-house emergency generator for hurricane season

## GENERATOR SAFETY

**Toxic fumes:** As with any engine that runs on gas, a generator's exhaust contains carbon monoxide, which is very toxic if inhaled, even if for only a short time. Never operate a gasoline generator in an enclosed space, and it should be kept away from doors or windows, where drafts or breezes could blow the carbon monoxide back inside.

**Chill out:** Because generators are gravity fed, most fuel tanks are on top of the units. This, combined with refilling a fuel tank while the engine is running or is very hot, can easily lead to a catastrophic fire. Only refuel your generator after it has completely cooled. Pour carefully and slowly, and clean up any spilled fuel.

**Lock it down:** Because most people operate their generators away from their homes because of the noise and fumes, it can be an easy target for thieves. It is always a good idea to chain it to a tree or a stake in the ground to keep it secure and safe.

**Never backfeed:** Backfeeding a generator is connecting it to a household outlet with a heavy power cord. This forces power into the main panel and then throughout the house (and possibly back to the transformer, where it is stepped up to thousands of volts). It's not only illegal but also very dangerous. The cord is called a "suicide cord" for good reason.

**Store gas safely:** Store reserve fuels away from the generator, because a gas spill or concentrated vapors around electricity can lead to a disaster. Ideally, fuel cans should be locked up, especially during an emergency situation—during which gas is gold.

## PLUG IN

As you begin shopping for a generator to handle your survival needs, you'll quickly notice there is no such thing as "one size fits all." It depends on your budget, what you plan to power, and what fuel and how much fuel you will be storing. To help you get started, we have included the specifications for six generators on the next two pages.

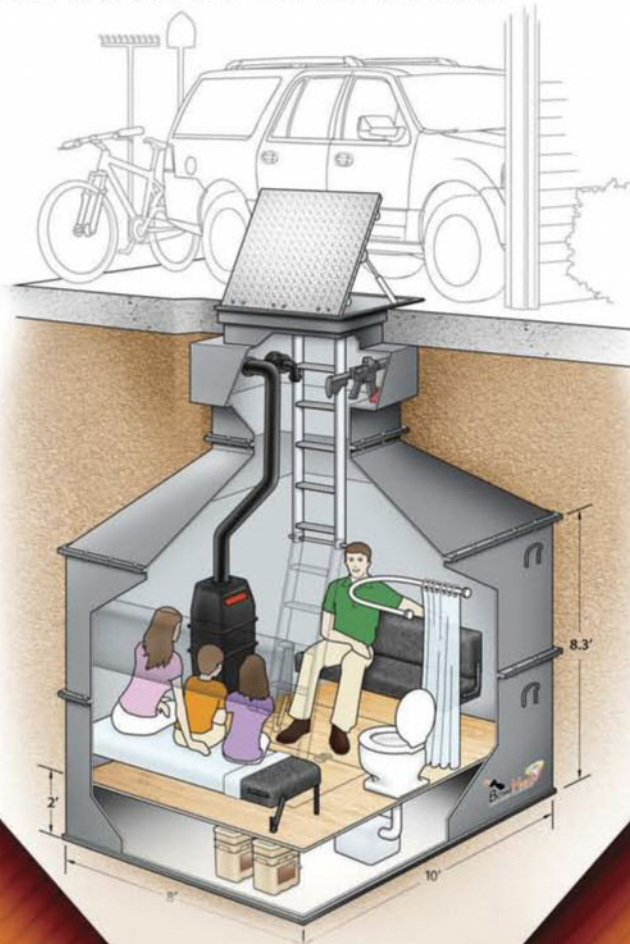
Buying a generator should be undertaken with the same seriousness, research and care you would devote to buying a new knife or handgun. After all, your life could depend on it. **ASG**





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## Honda EU2000i

### Overview

This Honda EU2000i inverter generator is very quiet, easy to carry and fuel efficient, making it ideal for TVs, small appliances and basic lights. The stable power allows for safe use of computers and other sensitive electronics. With a very low 59 decibels at max power, it is perfect for an inconspicuous source of power. It is small (about the size of a gym bag) and light, at only 47 pounds. It can last nearly 10 hours on 1 gallon of gas and can provide 1,600 watts of continuous power.

### MSRP

\$999.99

### Specifications

- Type: Inverter
- Surge watts: 2,000
- Rated watts: 1,600
- Start type: Recoil
- Disp. (cc): 98
- Hp: N/A
- Engine: OHC
- Run time: 9 1/8 hrs. @ 1/4 load
- Receptacles: 2
- Parallel ready: Yes
- Noise (dB): 59
- Fuel: Gas
- Capacity: 1.00 gallon
- Low-oil shutdown: Yes
- Dimensions (inches): 20 1/8 x 17 1/5 x 6 3/4
- Weight: 47 pounds



## Honda EU3000is

### Overview

This inverter is the most expensive unit on our list—flipping the bill at nearly \$2000. For that money, you get the longest run time (20 hours) and the most continuous power (2,800 watts) with the largest gas tank and the quietest motor (a whispering 49 decibels). It is CARB-compliant and can be sold in all 50 states, has an electric start and two handles for easy loading (although it is more than twice the girth of other inverters on the list).

### MSRP

\$1,999.99

### Specifications

- Type: Inverter
- Surge watts: 3,000
- Rated watts: 2,800
- Start type: Electric/recoil
- Disp. (cc): 196
- Hp: N/A
- Engine: N/A
- Run time: 20 hrs. @ 1/4 load
- Receptacles: 3
- Parallel ready: Yes
- Noise (dB): 49
- Fuel: Gas
- Capacity: 3.51 gallons
- Low-oil shutdown: Yes
- Dimension (inches): 25.8 x 8.9 x 22.4
- Weight: 144 pounds



## All-Power American 1000

### Overview

The All-Power American conventional generator is environmentally friendly and complies with CARB requirements, along with having the EPA's approval. The 2.5 hp engine provides 1,200 surge watts and 1,000 rated watts. The 1.3-gallon fuel tank allows for a run time of more than eight hours at half load. This generator features a 120-volt outlet and one integrated 12-volt DC outlet, along with an integrated 12-volt, 15 peak amp DC trickle battery charger with cables.

### MSRP

\$319.99

### Specifications

- Type: Conventional
- Surge watts: 1,200
- Rated watts: 1,000
- Start type: Recoil
- Disp. (cc): N/A
- Hp: 2.5
- Engine: N/A
- Run time: 8 1/2 hrs. @ 1/2 load
- Receptacles: 3
- Parallel ready: N/A
- Noise (dB): 65
- Fuel: Gas
- Capacity: 1.30 gallons
- Low-oil shutdown: Yes
- Dimensions (inches): 15 x 11 1/2 x 13 1/2
- Weight: 53 pounds



# GENERATORS



## Powerhouse PH2100Pri

### Overview

The fuel economy switch on this unit extends the run time, while the low-oil shutdown feature protects the engine in the event of an oil consumption issue. It works at various engine speeds to produce a very-constant 120 volts at 60 hertz and has a remote electric start with a recoil back-up. Slightly noisier than others in its class, it has a respectable run time and can be paralleled with the included cable.

### MSRP

\$649.99

### Specifications

- Type: Inverter
- Surge watts: 2,100
- Rated watts: 2,000
- Start type: Electric/recoil
- Disp. (cc): 125
- Hp: 4.35
- Engine: OCV
- Run time: 7½ hrs. @ ¼ load
- Receptacles: 3
- Parallel ready: Yes
- Noise (dB): 66
- Fuel: Gas
- Capacity: 1.30 gallons
- Low-oil shutdown: Yes
- Dimensions (inches): 22 x 11 x 19
- Weight: 85 pounds



## Honda EB3000C

### Overview

The Honda EB3000C conventional generator features an easy-starting Honda OHV engine that creates 2,600 watts of continuous power from its 196cc engine while humming at 68 decibels. The 2.7 gallons of gas are used up in slightly more than nine hours at half load. The outlets (one duplex) are GFCI protected. This generator uses a special CPU to create stable, high-quality power with less weight, as compared to a traditional generator.

### MSRP

\$1,439

### Specifications

- Type: Conventional
- Surge watts: 3,000
- Rated watts: 2,600
- Start type: Recoil
- Disp. (cc): 196
- Hp: N/A
- Engine: OHV
- Run time: 9.4 hrs. @ ½ load
- Receptacles: 3
- Parallel ready: N/A
- Noise (dB): 68
- Fuel: Gas
- Capacity: 2.70 gallons
- Low-oil shutdown: N/A
- Dimensions (inches): 17½ x 15⅞ x 19
- Weight: 81 pounds



## Generac XG6500

### Overview

This model tips the scales as the heaviest conventional generator on the list—230 pounds—but provides one of the longest run times: 13 hours (at half load). It produces 6,500 watts of continuous power and has the largest displacement engine with the biggest gas tank. It starts with a pull cord (recoil start) and has five receptacles.

### MSRP

\$1,059

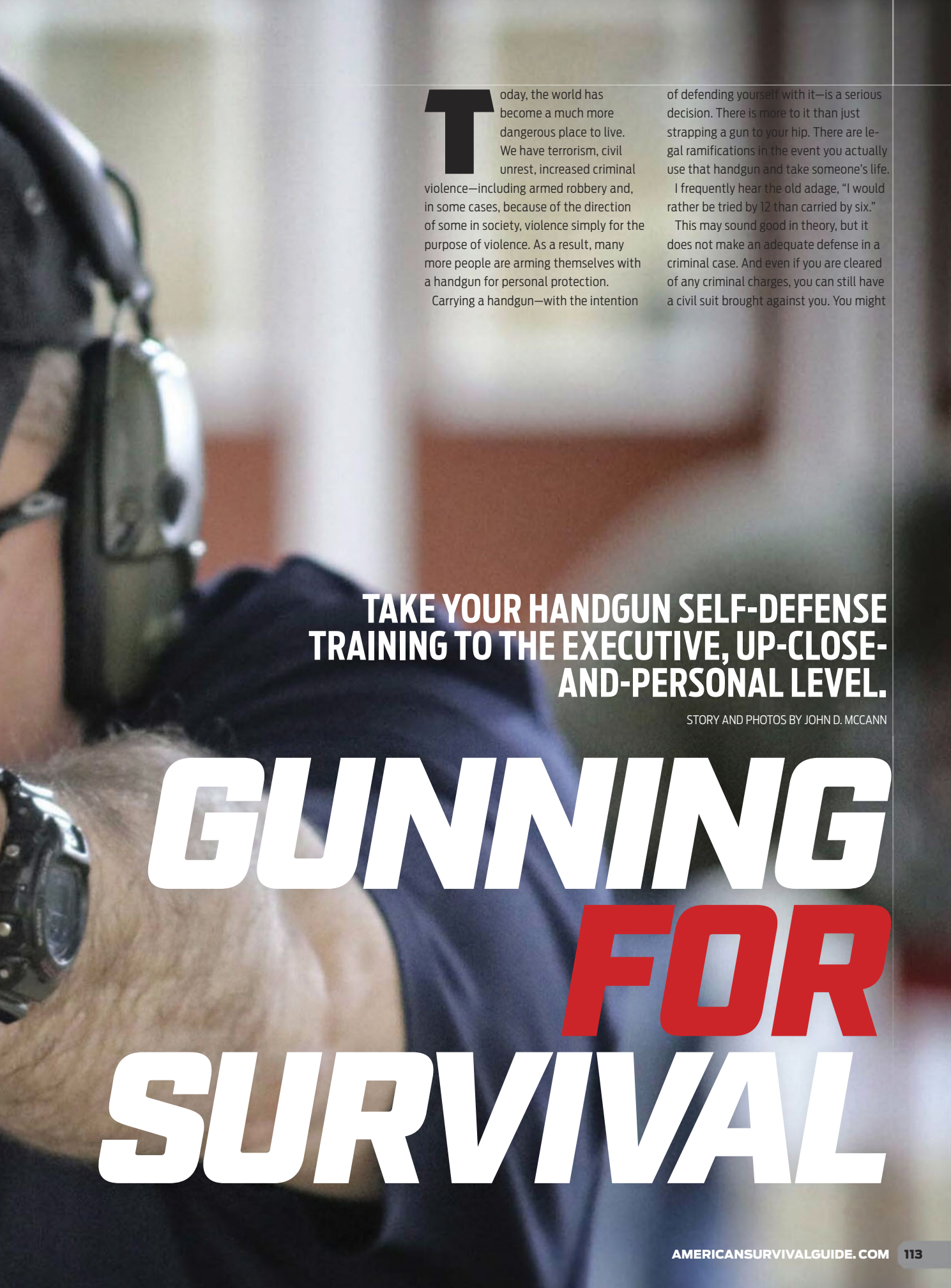
### Specifications

- Type: Conventional
- Surge watts: 8,125
- Rated watts: 6,500
- Start type: Recoil
- Disp. (cc): 407
- Hp: N/A
- Engine: OHV
- Run time: 13 hrs. @ ½ load
- Receptacles: 5
- Parallel ready: N/A
- Noise (dB): N/A
- Fuel: Gas
- Capacity: 9.00 gallons
- Low-oil shutdown: Yes
- Dimensions (inches): 31½ x 25 x 27
- Weight: 230 pounds









**T**oday, the world has become a much more dangerous place to live. We have terrorism, civil unrest, increased criminal violence—including armed robbery and, in some cases, because of the direction of some in society, violence simply for the purpose of violence. As a result, many more people are arming themselves with a handgun for personal protection.

Carrying a handgun—with the intention

of defending yourself with it—is a serious decision. There is more to it than just strapping a gun to your hip. There are legal ramifications in the event you actually use that handgun and take someone's life.

I frequently hear the old adage, "I would rather be tried by 12 than carried by six."

This may sound good in theory, but it does not make an adequate defense in a criminal case. And even if you are cleared of any criminal charges, you can still have a civil suit brought against you. You might

**TAKE YOUR HANDGUN SELF-DEFENSE  
TRAINING TO THE EXECUTIVE, UP-CLOSE-  
AND-PERSONAL LEVEL.**

STORY AND PHOTOS BY JOHN D. MCCANN

# ***GUNNING FOR SURVIVAL***



lose everything you have ever worked for if you lose that lawsuit.

For many, there are also emotional ramifications in connection with the taking of a life.

These variables cannot be taken lightly. Therefore, proper training, including understanding the legalities of shooting another person, is essential for anyone who carries a handgun for protection.

When I talk to people who indicate they carry a handgun, I often ask what type of training they have had and how much they train. I am often told they go to a range on occasion and practice shooting at paper targets. Others shoot at targets (including cans) in their yard.

Although practicing hitting a paper target helps with accuracy, in my opinion, it never allows a person to leave their comfort zone. When a real situation occurs, you most likely will not be shooting at a stationary target, and your target just might be shooting back.

For this reason, as well as many others, I believe that if you are training for survival, a defensive handgun course is in order.

### ENLIST AN EXPERT

When I decided to do this article, I went to an old friend of more than 20 years—Don Redl Jr., who is based in New York. Don has been named a “tactician” by the American Tactical Shooting Association, which is the sponsor of the National Tactical Invitational. This latter organization has consistently recognized Don as one of the top five participants for many years. He was named “shotist” in 1999, making him a “national champion.”

Don has personally trained numerous law enforcement and corporate security



◀ Smoke and flying brass on the firing line

professionals in executive protection, firearms and scenario-based force-on-force training. I used him as my primary tactical firearms instructor for a firm I owned years ago. Among other things, Don provided specialized training to executive protection teams.

***“SHOOTING A PAPER TARGET AT A RANGE WILL HELP WITH YOUR ACCURACY, BUT IT WILL NOT PREPARE YOU FOR A REAL-WORLD DEFENSIVE SITUATION.”***

Don now runs Executive Options, LLC, which provides specialized services that include executive protection. It also offers training programs that include Defensive Handgun, Protector Pistol and Tactical Pistol.

He also offers more-extensive courses, such as Conducting Cover and Evacuation Exercises at Danger-Close Distances. These more-advanced courses use Simunition FX, a marking cartridge that is fired from a standard firearm. Using this ammunition requires the installation of a drop-in conversion kit that does not permanently alter the weapon and can be easily removed. These kits ensure that normal service rounds cannot be fired during training and allow the use of the Simunition ammunition, which works with reduced pressure/reduced velocity. (We were using this technology more than 20 years ago to ensure realistic and effective, reality-based training.)

### THE RIGHT TRAINING

I find that when students attend courses required in order to get a CCW, they are only there to get through it. Basically, the qualification requirements are predefined; therefore, the training program becomes “outcome based” and creates a “teach-to-test” mentality.

On the other hand, a defensive handgun course is a performance-based training program, in which standards are a way of measuring performance. Standards should not be something easily achieved and/or considered a qualification. Standards should be a system of measurement that reinforces a performance-based training program—one that gives the student a medium to self-assess and that rewards improvement and also identifies weaknesses, gaps and/or training scars.

▶ Because of the amount of ammo used during the course, students had to re-load magazines quite often.





Standards should include both objective and subjective tests. Objective standards should be documentable, difficult, plausible and in use by a verifiable entity that uses a performance-based training program. Both tests compartmentalize specific tasks (i.e., contact, mid-range and extended distances; strong hand only; support hand only; turns, pivots, multiple targets; and movement), all under challenging time allotments. Both tests are challenging, comprehensive and reward success, as well as identify specific areas that need improvement.

Subjective standards are best attained through realistic scenario-based, force-on-force training. One thing that has been consistent throughout the years is that “victims” of a lifetime of outcome-based training, when put under the stress of scenario-based, force-on-force training, normally fall apart. Then, because they have never done anything other than qualify, they make excuses for their lack of performance.

These are the people who unload everything they have and score zero hits on intended targets. That could mean a lot of hits on unintended targets.

What I like about Don’s Defensive Handgun course is that students must make both a time and financial commitment to better themselves. As a result, they make

***“ULTIMATELY, STUDENTS LEAVE WITH SKILLS AND ABILITIES IN PLACE THAT THEY WERE NEVER AWARE EXISTED PRIOR TO THE COURSE.”***



the greatest gains in the shortest amount of time. Ultimately, students leave with skills and abilities in place that they were never aware existed prior to the course.

The course starts at 8:00 a.m. and runs until 4:30 p.m. For effective individual attention, the number of students is limited to 12—although Don feels the ideal number is four to six. And although the range for this course is outside, it is completely covered overhead, which makes training easier for the students during inclement weather.

➤ Guns not holstered behind the firing line must be properly benched. Left: A Glock 17T, used for Force-On-Force courses, as well as for demo purposes; center: a Blade Tech barrel for dry fire training; and right: a gun with an empty chamber indicator, which can be used when a gun is benched.



◀ Inert “blue” guns are a must for anyone who is serious about their training. These were used during the Defensive Handgun course.



## “DEFENSIVE COURSE,” DEFINED

The objectives of the Defensive Handgun course are many. It includes the safe and effective draw, presentation and re-holstering techniques, loading, unloading, reloading and malfunction drills.

Students perform contact-distance shooting at distances of 0 to 5 feet and confrontational-distance shooting at distances of 0 to 10 feet. Also covered are:

- ◀ vertical-tracking shot-placement;
- ◀ two-hand-supported and single-hand shooting techniques;
- ◀ proactive self-defense shooting techniques;
- ◀ reactive self-defense shooting techniques;
- ◀ accurate single- and multiple-shot placement;
- ◀ how to engage multiple targets;
- ◀ how to move and shoot;
- ◀ self-analysis techniques; and
- ◀ properly using the sights in situation-specific scenarios.

This course is clearly both thorough and fast paced.

The one I attended consisted of four students. Three of the four students were new gun owners and wanted to become proficient with their guns before carrying them. The fourth had been carrying for a while, but had only shot at paper targets and wanted more-realistic training in the event he actually had to use his gun in a defensive situation.

Each student was required to have a minimum of 400 rounds and at least one spare magazine (all the students had three or more).

The first thing on the agenda for the day consisted of a safety briefing and establishing the range rules: No guns were to be unholstered behind the firing line. If a gun was not in a holster, it had to be benched in a manner that immediately revealed the gun was in a “safe” condition. Inert blue guns would be used initially to practice safe and effective draw, presentation and re-holstering techniques.

After the safety briefing, Don commenced with a discussion regarding proper handgun fit, holsters, grip and stance, sight alignment, trigger control and re-set, as well as defensive draw, presentation and re-holstering.

## THE DRILLS

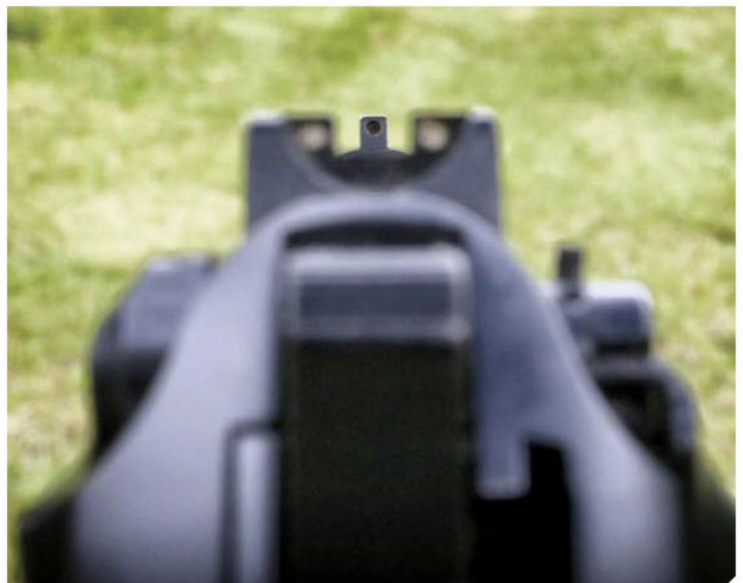
Initially, students worked on paper targets with one- and two-shot drills, two-shot emergency reload drills and

› Don Redl Jr. gives the early-morning safety briefing.



managing malfunctions. Vertical tracking drills were also performed.

Paper targets measure accuracy, but you have to wait for feedback. Therefore, steel targets were next on the agenda for immediate feedback of firing exercises. Next came movement drills designed to maximize the students' ability to engage a threat with the appropriate level of force while minimizing personal injury.



› Proper sight alignment with the front sight in focus



By definition, bad guys always initiate the conflict; therefore, their actions place you in a reactive position from the start. If you allow yourself to be put in a reactive position and kept there, you will never be able to overcome the force being used against you. In order to survive, you must

***“WHEN A REAL SITUATION OCCURS, YOU MOST LIKELY WILL NOT BE SHOOTING AT A STATIONARY TARGET, AND YOUR TARGET JUST MIGHT BE SHOOTING BACK.”***



➤ Above: Students work with paper targets for loading, unloading, reloading and managing malfunctions drills.



◀ A student engages a steel target for immediate feedback.

turn the tables on your attacker(s) with aggressive, proactive offensive-defensive techniques to force them into a reactive position.

As with all movement techniques, students learned that their first move was to get out of the line of force for their own self-preservation and then engage the attacker while safely moving. Drills were performed in:

- ◀ proactive forward movement;
- ◀ reactive rearward movement;
- ◀ contact-distance shooting;
- ◀ confrontational-distance shooting;
- ◀ turns and pivots;
- ◀ multiple target engagement with movement; and
- ◀ one-hand shooting techniques.

Confrontational-distance shooting is an important part of the course. This technique is used at a distance of about 3 to 6 feet and is known as the “gun grab distance.” The student learns that during the draw stroke from the holster, the dominant hand remains in contact with their body as it slides to the center of the chest. The support hand completes the two-handed grip vertically indexed under the operator’s nose and as close to the body as possible while still maintaining a proper grip. This is considered the “weapon-retention position.” This technique is used at close-quarters distances at which full extension of the weapon might result in possibly being disarmed.



## SOURCE

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## LESSONS LEARNED

I would go into detail on each of the drills, but I don't want to give away the entire lesson plan for Don's course. However, here are just a few of the many important lessons learned.

The majority of gunfights occur under 10 feet, and almost 50 percent under 5 feet. Don't present your weapon forward of the body if you are close to an assailant. Don't be in a hurry to re-holster your weapon; be sure there are no other threats before you do so.

Get off the line of force! When you move, you are being proactive, which forces the assailant to be reactive—thereby buying you more time. Move left or right, and never cross your legs when doing so.

When transitioning from one target to another, move your eyes first and then your weapon so you don't overshoot your target.

## PARTING SHOTS

Overall, I thought the course was excellent, and student feedback indicated that they had not anticipated learning as many skills as they did. Each student felt they had become much more comfortable with their handgun and were much more confident with its use, especially if they had to use it to defend themselves.

As I indicated at the beginning of this article, if someone is going to carry a handgun for defense, they should get some real training. Shooting a paper target at a range will help with your accuracy, but it will not prepare you for a real-world defensive situation.

Get some serious training from a competent instructor. It just might save your life. **ASG**



◀ The author (left) with instructor Don Redl Jr.

► Don Redl Jr. observes the firing line.







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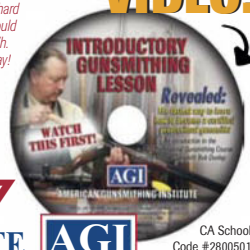
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# WALKING DEAD REALITY CHECK

WHEN PREPPING FOR REAL DISASTERS, IT  
MIGHT NOT BE WISE TO PUT MUCH STOCK  
IN HOLLYWOOD SCRIPTS.

BY MASSAD AYOUB • PHOTOS COURTESY OF AMC NETWORK

It has been said that *The Walking Dead* is the most popular television show in America. Its theme is that an epidemic has killed off most of the population and turned them into cannibalistic zombies.

Our heroes are a handful of men and women who have survived and are fighting for their lives with assorted firearms and contact weapons and, yes, crossbows. Their enemies include not only the voracious hordes of undead who vastly outnumber them, but other surviving

humans who have gone totally feral and prey on their own kind.

The underlying theme is supposed to be good people bonding together against adversity. Some sociologists have suggested that it's an allegory for a social uprising in which the "walking dead" are the "have-nots," and the remaining live people they want to devour are the "haves" of society.

Leaving all of that to the sociologists, let's start looking at what the show might teach us about real-world societal breakdown, as opposed to Hollywood fantasy.

## TAKING AIM

They (the zombies) used to be human, but now, the essence of their humanity—thought, care, compassion—is gone. They are driven only to attack, kill and eat. All their brain activity seems to be taking place around the primal brain, according to what the survivors are shown in the first season at the Center for Disease Control in Atlanta. This is the deep brain (pons, medulla oblongata, brain stem), which sits relatively low in the center of the cranial vault.

To reach this critical brain area—the





"shut-off button"—the point of aim with the zombie's head erect would be the nasal cavity from the front, the ear canals from the side or the base of the skull when aiming from the rear. With the head lolling back as the creature came at you, a shot into the open mouth or under the chin would get the bullet where it needed to go, and with the head forward—vulture-like, in an attacking posture—that part of the face that would now be in line with the deep brain would be the eye sockets.

All of this means that many of the "walker kills" we see on the show—a short penknife thrust into the forehead, a hatchet buried only an inch or so into the top of the skull—wouldn't go deep enough to get the job done.

Moreover, unless the zombie is so far gone to decomposition that its skull is now as soft as a Halloween pumpkin left too long on the porch, human skulls are hard. They are helmets of bone that have evolved with

curves and angles that deflect impact.

There are countless cases in the trauma journals of bullets glancing off foreheads, skidding under the scalp and exiting the skin on the other side of the head without piercing the brain cavity. Bullets have also been diverted off course when striking the upper and lower mandibles from the front. To use a stabbing weapon to reach a zombie's deep brain, one would need to punch the blade deeply through the ear canal or just beneath it, through the nose, straight in or through the eye sockets, angling slightly downward.

➤ *Right:* With so many friends who have died or are amputees from zombie bites on limbs, wouldn't survivors learn to wear leather jackets and gloves such as these from Bill Rogers? (The pistol is a Springfield Armory Range Officer .45.)



◀ *Far left:* A 6-inch-barreled Colt Python .357 Magnum is a fine six-shooter. But for a zombie apocalypse, it might make more sense to carry ...

◀ *Near left:* ... a 20-shot 9mm such as this Springfield XDM, along with a TLR-2 light/laser and half a dozen spare 19- to 21-round magazines on one's belt.



These are all small points of aim on a target unlikely to be standing stock-still. The weakest part of the skull, itself, is the temple, and on reasonably fresh bone, that would still require a powerful blow. A long, narrow, strongly made ice pick or sharpened screwdriver might be the weapon-of-choice—not some of the cutlery we see so employed on *The Walking Dead*.

## CLIMATE CONSIDERATIONS

The show is set in the American South, beginning in Georgia and with the hardy band of survivors making their way no farther north than Northern Virginia. Its parallel series, *Fear the Walking Dead*, begins in Los Angeles, and at this writing, the survivors are trying to flee south, having reached Mexico.

Um ... wait a minute. The zombies are the walking dead, right? No heartbeat? No circulation? They are no longer warm-blooded creatures and are more probably cold-blooded—if they have any blood flow at all. Why not head north to colder climes? So, as soon as serious winter comes, the zombies should all freeze up too solidly to chase or ambush the living, and their brains could be ice-picked at leisure.

## PROTECTIVE GARB

There's no indication that "zombification" magically transforms human teeth into hollow fangs and creates venom sacs with injection mechanisms; nevertheless, a zombie bite anywhere kills (and here, transforms) its victims faster than the bites of most venomous snakes. Obviously, the transmittal medium for "zombie cooties" would have to be something on the order of blood-borne pathogens.

Enough of the survivors have seen their colleagues killed or maimed by bites to arms, legs and necks that in "real life," they'd all have looted motorcycle shops for full-body protective leathers by now, not to mention protective gloves. But no, it's hot, so t-shirts and sometimes shorts are frequently the uniform of the day. They're often covered with zombie blood and gore—occasionally even deliberately soaking themselves with it to pass through zombie herds—to turn them into the walking dead, themselves. Yet, nothing ever enters their systems through the open cuts and wounds they've sustained. Hmmm ...

## TRANSPORTATION

It's been six seasons—presumably, six years—since the Zombie Apocalypse. Oddly enough, no one on the show has thought to call them "zombies"; instead, they're "walkers,"



◀ Above: This injured Army colonel is on the range, running his M4 one handed. He knows that if precision hits are needed on multiple targets, he'll need his selector switch set on semi-auto, not full.

**“THE PREVALENCE OF SELECTIVE-FIRE M4 AND M16S AND BERETTA M9 PISTOLS IS CONSISTENT WITH THE FACT THAT LOTS OF THESE WEAPONS WOULD HAVE BEEN LEFT AROUND TO SCAVENGE ...”**

"roamers," "biters," "rotters"—whatever each little cluster of survivors has dubbed them. Even more odd is the fact that, after all this time, the survivors find cars with live batteries, tires that have not succumbed to dry rot and gasoline that has not degraded.

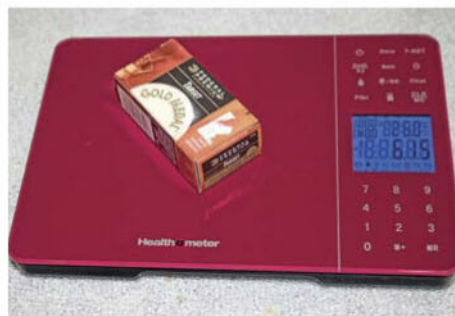
◀ Below, left: Ammo logistics: A magazine of only eight rounds of 230-grain .45 ACP weighs 8.25 ounces ...

◀ Below, right: ... but 50 zombie brain shots' worth of .22 Long Rifle weigh only 6.15 ounces.

## SHOW GUNS

"Gun people" find it hard to maintain a willing suspension of disbelief when the hardware isn't right. Early on in the series—and, in some respects, since—the show's technical advisors have actually made some pretty sound decisions regarding armament.

In one episode, the lead character is inside an abandoned tank when he has to shoot a tank driver who has turned zombie. His .357 Magnum round does, indeed, put the creature to rest. But after the shot, the hero drops his Colt Python and puts both hands to his ears with an



◀ Far left: If *Walking Dead*'s Michonne is so adept with her sword, why can't she learn to hold a 9mm Beretta properly?

◀ Near left: Local lawman Rick should have known there was a vast supply of munitions at the local Atlanta Arms and Ammo factory when the outbreak occurred.



**“WHAT WE REALLY GET FROM IT IS THE LESSON THAT WHEN SOCIETY BREAKS DOWN, WE’LL NEED TO COOPERATE WITH OTHERS—WHO ARE OFTEN ‘NOT LIKE US’—AND WILL HAVE TO USE COMMON SENSE TO MAKE IT THROUGH THAT PARTICULAR APOCALYPSE.”**

expression of absolute agony. That’s real: The hard, high-decibel *crack!* of a Magnum reverberating in such a confined area would be likely to cause not only pain, but some degree of permanent hearing damage, as well. (Hey; maybe that’s why those folks who never use ear protection when they shoot zombies by the score with high-powered weapons can’t ever seem to hear their opponents sneaking up on them.)

The prevalence of selective-fire M4 and M16s and Beretta M9 pistols is consistent with the fact that lots of these weapons would have been left around to scavenge after the zombie hordes overpowered the U.S. military forces sent to contain them.

The high number of Glock and SIG pistols?



◀ *Above, left:* Considering “zombie anatomy,” stout, sharp-tipped screwdrivers could be more useful for zombie extermination than a machete.

◀ *Above, right:* Six seasons into *The Walking Dead*, long-abandoned cars start right up, and their tires don’t look like this, as they likely would in real life.



Yup, they’re in wide use among law enforcement, and the zombies gobbled most of those folks up, leaving their weapons behind for the survivors to salvage. What about the scenes involving Atlanta police, who were all armed with Smith & Wesson M&P service pistols? Those .40-caliber M&Ps were standard issue for the Atlanta Police Department at the time that season was scripted (although they’ve since been traded for Glocks in the same caliber).

Alas, not all the hardware on the show is as spot-on. The hero’s aforementioned Colt Python is a super-expensive prestige revolver; he has a 6-inch barrel. Yet, even before the apocalypse, he’s shown carrying it in a holster for a 4-inch model. That’s just a bozo move for any cop who is into guns enough to carry such a classic .357. The exposed, unprotected muzzle and front sight would have become badly battered by now.

Interestingly, in six years of hellacious, fast-moving gunfights and reloading on the run, the hero has still managed to retain the two speed-loaders he started with (and often wears on the back of his duty belt ... although any cop who knew anything about revolvers would carry the loaders on the front). Most of the survivors have been wise enough to obtain higher-capacity weapons than a six-shooter. That’s kind of real.

◀ *Right:* At an Appleseed shoot, young Marine Erik Pepin tries his hand with an S&W M&P15 .22 rifle. Could this be a useful “zombie gun”?



◀ *Below, left:* It’s best to practice on the most realistic targets possible.

◀ *Below, right:* This round would have hit the “shut-off button.”





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## THE FULL PACKAGE

The RDX 400 crossbow package includes an XO 3x32 illuminated scope, five-bolt quiver, three 20-inch Thunder Boltz carbon bolts, one 22-inch discharge bolt, neoprene no-slip sling, crossbow case, speed loader cocking device, cocking rope and more.

MSRP: \$1,100

[www.PSEArchery.com](http://www.PSEArchery.com)



Over the seasons, autoloading .22 rifles have been notable by their absence, and many wonder why the ubiquitous Ruger 10/22 has not seen more play. After all, there are high-capacity magazines for it, and 50 rounds of .22 LR weigh about 6.15 ounces—over 2 ounces less than the mere eight-round magazine in survivor Glenn's trademark .45.

Actually, I agree with the show's technical



***“OUR HEROES ARE A HANDFUL OF MEN AND WOMEN WHO HAVE SURVIVED AND ARE FIGHTING FOR THEIR LIVES WITH ASSORTED FIREARMS AND CONTACT WEAPONS AND, YES, CROSSBOWS.”***







advisors in not using .22s much: We've discussed the ricochet potential from skulls that aren't rotted soft, and a low-powered .22 is not the choice for combat against heavily armed bands of feral survivors.

### TACTICS CHECK

In such a scenario in the real world, ammunition would be in short supply and used sparingly, particularly in a world where precision marksmanship was needed for deep brain shots against the most likely threat. Yet, we constantly see wild, full-automatic hosing instead of the rapid, precise, one-shot-at-a-time delivery that would be far more effective. One primary villain, missing his right eye, slaughtered many by firing from his right shoulder with a select-fire Steyr AUG set on full auto—although he'd have had to literally aim cross-eyed.

The leader of the good guys and gals, remember, was a lawman in an agency outside Atlanta. He was into guns enough to have that expensive Colt Python, but he didn't know enough to go to Atlanta Arms and Ammo? This is an ammunition factory with enough stock ready to ship and components and machines on which to load cartridges. It is where they could have found (or made) enough ammo to hold off the zombies for the rest of their natural lives.

People like me watch the show and scream at the screen, "That kid doesn't have a rear sight on his Marlin carbine!" "That lady doesn't have any sights at all on her M16!" and "If Michonne can learn to be that deadly with a katana (a samurai sword), why can't she learn how to hold a Beretta pistol?"

And, if you're like me, your significant other will sigh and say quietly, "And yet, you accept walking corpses."

In the end, we have to remember that *The Walking Dead* is neither a documentary nor a training film. What we really get from it is the lesson that when society breaks down, we'll need to cooperate with others—who are often "not like us"—and will have to use common sense to make it through that particular apocalypse.

Which is probably what keeps us watching. **ASG**



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## WHERE TO BUY IT

**THE NEW WILDCRAFTED CUISINE: EXPLORING THE EXOTIC GASTRONOMY OF LOCAL TERROIR**, BY PASCAL BAUDAR  
 CHELSEA GREEN PUBLISHING, ISBN 97816035856061  
 HARDCOVER, 432 PAGES, 8X10 INCHES  
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# THE NEW WILDCRAFTED CUISINE: EXPLORING THE EXOTIC GASTRONOMY OF LOCAL TERROIR BY PASCAL BAUDAR

**T**his is simply a mouthwateringly stunning book! The photos are perfection, as is the rest of the book. This is not a plant identification book, and it's not a cookbook, either, at least not in the manner that you're used to seeing a cookbook.

*The New Wildcrafted Cuisine* offers a real breakthrough in its originality of content and presentation. Author Baudar uses all wild foods and offers them up in a broad array of dishes and drinks in an elegant and exciting way. This is wild food fine dining at its best. By sharing his many ways of creating tasty dishes from commonly foraged plants, he has opened up the huge potential of culinary art using the wild foods that nature provides.

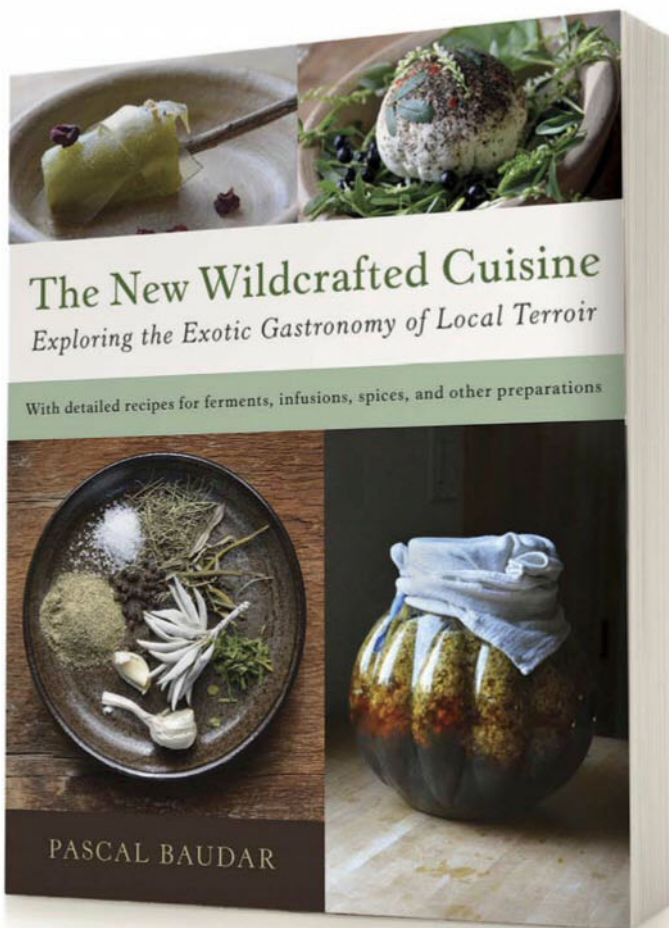
It's evident as you turn the pages that Baudar's knowledge of wild food cooking was earned through the countless experiments he shares with the reader. His passion for fine cuisine shines through so much that I'm predicting he is opening a new "wild foodie" niche in culinary arts.

Easily divided by the various types of foods, *The New Wildcrafted Cuisine* provides clear instructions for each recipe. And yes, as Baudar indicates, there is always room for innovation and your personal touch.

The contents are amazing and run the gamut from making wild cheeses to primitive beers and cooking with dirt, sticks, bark, leaves, sap and stones. He addresses preserving via dehydration and making cold infusions, creating wild spice blends and using wild mustards. Also covered are topics such as making wild sodas, hot sauces, jams and syrups.

This is not a book about identifying plants or about cooking. Rather, it is about exploring from a culinary perspective what the wilderness offers and how to create interesting ingredients that will represent your local terroir as a forager, cook or chef. To some degree, this book fills a gap between foraging and cooking. Many of the ideas and methods presented can be used regardless of where you live, because most of the plants or related species are found throughout the world.

It's worth noting that there has been a bit of a pushback from



native plant enthusiasts because of the great interest in foraging for wild foods. But nearly all of what Baudar discusses in his book are European natives that have run amok in North America and are generally regarded now as invasive plants.

*The New Wildcrafted Cuisine* is a work of love in the truest sense of the word. **ASG**



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# WORDS

## LAST

# THE BETTER LIFE WITH LESS

**T**here are many reasons the electrical grid could go out—anything from an accident to sunspots to terrorism. How would that affect our life?

Even 50 years ago, temporary blackouts were not all that disruptive to everyday life. Indeed, to children, they were exciting times, when you got to use lanterns and candles at night. Phones still worked, because most were simple rotary style.

In my household, we still had hand-cranked coffee grinders, wheat sifters, mixers and can-openers. We had very few electric food processing devices, and we got by just fine. We had no electric yard tools then, just (manual) rakes, brooms, clippers, trimmers and lawnmowers. All our tools were manual, too—hammers, saws, pliers, levels, etc.

Today, you can get an electric model of just about anything, and computer chips are everywhere. The up-and-coming generation knows nothing else, which is perhaps one of our greatest dangers.

Most folks, even if they grew up in the city, understand there should be a backup for when the power goes out. But too many young people know no other way of life but the all-electric-driven lifestyle.

If the grid goes down for whatever reason, the world of Eagle Rock and beyond will be a very different place—maybe temporarily, maybe long term. There really is no way to predict what would happen, but there are various ways to prepare, both mentally and physically.

Take a walk through your home and look at everything controlled by electricity. What would your day be like if there were no power? Some things would be hard—or impossible—to replace without electricity. But many other electrical functions could easily be handled with manual tools or “old-fashioned” technology.

Lights are easy. My mother always had a good supply of candles, lantern and flashlights, and whenever there was a blackout, the house was fully lit.

You should still be able to process your meals if the power goes out. Visit any kitchen supply shop and purchase a manual can opener, juicer, coffee grinder, egg beater (hey, a fork also works just fine!), grinder, slicer, etc.

A refrigerator won't work without electricity, so unless you have some solar panels on your roof, you'll want to store plenty of non-refrigerated food. This means pickled, dried and canned. A huge advantage is, of course, having a backyard and neighborhood garden, as well as backyard chickens. Your food is fresh, local and not dependent on transportation systems.

Home heating and cooling is a big topic, and if all houses were built with thicker, more-insulated walls, white, heat-reflecting roofs, big overhangs, etc., much of the cost of heating and cooling would be unnecessary.

I spent almost two years in the late 1970s as a squatter and practiced a lot

of the ecological living methods that are becoming very popular today. We recycled everything, cooked on a wood stove, grew a lot of our food, recycled all household water and even used (for a part of the time) a compost toilet. Had the grid gone down during that time, it would have just been an inconvenience.

During that time, I had the advantage of living in a house that had been built with thick walls, a flat, south-facing roof and large overhangs. Due to its position in a wind path and its good construction, we never used any heaters or coolers. The roof, once it was painted white with a liquid-rubber roofing product, made the place about 15 degrees cooler in summer.

I grew much of my own food and sent the bath water out into the garden. I raised some ducks, grew corn, beans, squash and tomatoes. I used a wood stove a neighbor let me borrow, and I fertilized with wood ash.

I learned on the job how to live better for less and discovered that I could live well by looking to the past. We did have a used refrigerator, although it barely worked, so we learned to buy most of our food in a form that didn't require refrigeration.

Perhaps the biggest challenge for most people in a grid-down world will be that the infrastructure around them will not work or will change rapidly into something that does work: There will be bartering, and things will get very localized.

How can you prepare for such an eventuality? Keep on reading, doing, experimenting and learning about how to make do with less. That way, you'll be prepared for the worst. **ASG**





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